

Rattenkrieg!

**World War Two Skirmish Rules
for Serious Historical
Wargamers**

Second Edition

PROLOGUE

Every time I have begun to play a set of rules I have ended up getting bored or tired with some problem with the rules. Whatever the level, squad, platoon, company or battalion, they all lacked certain aspects that drove me on to look for something more realistic.

In some it was the excessively large distances and forces, and dozens of armoured vehicles joined with heavy artillery that barely managed to make it to the other side of the table. In others, lists were studied to ensure the most powerful unit or vehicle at that moment was in position, or they were designed so that both forces exchanged fire from one cover or another, but at the moment of attack, and having rolled dozens and dozens of dice, you had the feeling that you had completely wasted your time.

Having flitted from one manual to another for some years and having discarded a large number of rules that did not respond to the expectations of my gaming group, I bought Rattenkrieg! after reading the level of detail it appeared to have on its web page.

I have to admit that the first time I opened the set of rules I entered into an initial state of “shock” just looking at the volume of rules and tables that I thought I’d have to learn in order to be able to play, and the level of detail that needed to be depicted in the game, so I immediately discarded it, leaving it practically untouched.



In memoriam
Alfredo de Malibrán y Moreno (1928-2016)

After some time, and not having discovered a system for simulating battles between tanks, I decided to reread it. Despite the large number of vaguely explained and often confusing rules in the first edition, I was impressed by the simplicity with which they could be applied to the gaming table.

Following several trial games we were pleasantly surprised to see that what initially seemed was going to be a long and cumbersome game, actually became a highly intense one where both sides were completely embroiled in the fight.

The majority of rules are optional so we were able to introduce them bit-by-bit to gain greater experience of the game. The tables and modifiers become self-explanatory after just a couple of uses, and you soon stop needing to refer to them as they are, for the most part, very intuitive.

The set of rules has a high level of detail that allows you to freely coordinate various units until you appreciate the difference between left and right-handers in combat. All this without reducing playability and without unnecessarily lengthening games.

Having adopted the set of rules and contacted Barrage Miniatures to solve some queries, a friendship soon developed and we began to test the second edition of the rules, as the first proved to be more of a beta than a complete set of rules.

This led us to try out the new rules little by little as they were being incorporated into the new set and even comment on these changes to improve playability and understanding.

The effort and commitment that those from Barrage Miniatures have put in to this publication over the past two years are clearly reflected in the level of detail in Rattenkrieg! which allows you to dive with a Stuka on a tank or cross a river in a rubber dinghy under enemy fire, and even interrogate a prisoner following an attack or crush an enemy antitank component under the tracks of your T34.

Those who enjoy reading the memoirs of fighters such as Otto Carius “Tigers in the mud” will see a great number of details reflected in these rules.

I hope you enjoy reading or playing as much as we have enjoyed collaborating with Barrage Miniatures to help, where possible, in achieving the publication of this great set of rules.

David Lacunza

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1. INTRODUCTION



1.1. Why Rattenkrieg?

In Spring 2015, we decided to extend our catalogue with modular buildings (for 28mm) and give our customers (and ourselves) a tool to play skirmish games focused in urban combat. When we finally got the first prototypes, we tried to find a set of rules to use them with.

With so many sets of rules in the market we thought that we just needed to find one which covered the three aspects we love in a wargame: The historical, to understand and learn how men and machines interact under battle conditions; the aesthetic, to reproduce visually the places and situations where these men and machines found their destruction or Glory, and of course, the playability and fun, because this is a hobby and our lives are too short to waste our time with boring and slow rules.

But after several months buying, learning, testing and discarding rules, we discovered that the balance between these three aspects was not easy to find. Some games gave us fast ways to solve a tactical situation, but in return, their abstraction level was too high, but, in other rules, the love for detail and meticulousness turned even the simplest combat into a tedious and complex process where the player needed to spend most of the time looking the tables up in the rules.

So we decided to write our own ones from scratch. This is exactly what we never wanted to happen, but we saw no alternative if we really wanted to play historical, aesthetical and fun wargames.

Coming up with the rules was an interesting process. We started to read documentation about the topic -from army manuals and personal accounts of men who fought at Betio, Stalingrad, Berlin or Warsaw. We also watched many World War II training films in order to be able to reproduce the combat procedures. In order to reproduce the combat effects we consulted numerous casualty reports not only to learn how many people were killed or wounded, but also what was the cause of their injuries. Due to the fact that I spent most of my career working in simulators, our very first approach (given the complexity of the problem) was to create an app to help the players to play, but soon we learned that people prefer a more traditional approach to wargaming, rolling dice and checking tables, so we “modeled” a game engine to simulate the game world. A few rules and a coherent set of formulae gave us the scaffolding to start building such a world.

So, Rattenkrieg! was born as a set of rules about urban skirmish during World War II, and was designed to transmit the complexity of this sort of combat to the player in the simplest, fastest, and closest way. But once we started the playtesting, we felt that we should go one step further. The “simulator” worked at a very small scale (one platoon per side, fight-

ing to take a two storey building), so we started to play with a tank. And it worked! The formula used to calculate the effects of explosives against walls worked seamlessly when we used AP shells against armor, AA ammunition against landing crafts or the bombs dropped from a Typhoon against a column of trucks.

If the game engine was able to do all these things, there was no reason to use it only in urban combat, so we pushed the limits a little further and Rattenkrieg! turned into what you have in front of you right now.

Our goal is to keep the world as “real” as we could - most of the data regarding radius of destruction and lethality of the explosives, penetration, etc is sourced from military manuals, post action reports and related documentation - but at the same time, to design a fast and easy to play game.

1.2. The Rattenkrieg! design

We found immediately that, in order to have an historical approach to the Second World War, it was not easy to find “consistent” information that covered from the effects of small arms to artillery shells, so we needed to dive deeper into the world of mathematics and physics to create the logical and numerical roots of the game.

For example, in the case of the light weapons, we calculated the penetration using the “F-Formula” designed to model the ballistic impacts and penetration of naval armor, computing the collision energy keeping in mind the caliber, weight, shape and type of the projectile and the muzzle velocity, and then we crossed this information against some forensic and military reports about the resistance of exterior walls against high velocity projectiles in order to find the equivalences. Of course, we needed to “tweak” the reality a little bit, but it was the only way to make the game both accurate and easy to play.

For the number of dice for every weapon, we assigned one to every pistol, revolver and bolt action rifle, assuming that most of

the times these shots would be aimed at an enemy. For those with high rates of fire, like submachine guns or machine guns, we assigned one die per every ten cartridges in their magazines, assuming that in one action, there is enough time to cock and shoot all the cartridges stored in the magazine, but not to change it, and that these bursts were not as carefully aimed as single shots.

For artillery shells, we used the same formulas, but in many cases we needed to take into account the energy added by the blast wave (we based the calculations on the TNT data, the explosive used in one or another form in World War Two).

For grenades, land mines and some other explosive devices, charges, etc, we used only blast wave energy and - where applicable - the effects of the fragmentation.

But the damage done to the target is in function of the overpressure produced by the shockwave, and the effects are absolutely different depending on if it hits a building or a living being. The building structures collapse long before the humans inside them start to be seriously affected by the overpressure (ruptured eardrums).

This is a wargame; and this means that it should “represent” the war with the risks, perils and opportunities inherent in it. In other words, we haven’t modified the “world” to fit the wishes of the players. This means that if you play the game ignoring the military doctrine, there is a high chance that your troops will be destroyed very fast.

However Rattenkrieg! is not only that. A wargame should be designed in such a way that the players could have fun without spending 30% of the game time reading the manual, waiting, frustrated or arguing. The sources of the players problems should be the terrain and the actions of the enemy, not strange and random “designer artifacts” created to introduce artificial stress in the game.

In fact, the game engine (examples excluded) barely take up six pages.



Chose a squad for each side and follow the examples step by step. Then play the Introductory Scenario. You will find that the mechanics work seamlessly and that, as a Squad Leader, you need to focus on keeping your men in sight and to decide if they should move, fire or react to the enemy actions.

Using the Light Weapons tables you will learn why the MG-42 was so lethal compared to others, but also why the Wehrmacht soldiers in the East Front preferred the PPSH41 over the MP-40.

As a tank commander you'll need to be conscious of your crew, but also use the strengths of your machine and the weaknesses of the enemy one to your advantage. If as a Red Army crewman you follow the doctrine and fight buttoned-up, you will not need to worry about enemy snipers, but your vision will be strongly limited.

Given that Rattenkrieg! covers nearly every aspect of the World War Two combat, from very small operations with just a few Commandos to company sized landings, we marked all the non essential rules as "Optional" (Opt). You, as the Player, are free to use them or not.

Right now, we consider that the "comfort area" of Rattenkrieg! for players with some experience, is to deploy one platoon (plus support) per player. Many of your games will probably be much smaller or bigger than that, so feel free to find your own limit. A typical game will last from one to two and a half hours.



1.3. Basic concepts

1.3.1. The rules

We developed Rattenkrieg! to be a "User Friendly Dice Powered Combat Simulator". This means that you can act in your games as you would act in a real combat. This is a "Fat Free" set of rules, so there are no "designer tricks" to end the turns, or to stop the enemy activating some of their units, so if you want to pin the enemy, or to halt their movement, you will need to do it by yourself using your figures, ingenuity, skill and perhaps a little bit of luck.

1.3.2. The game

The playing time of a game depends on the size of the forces present in the scenario and the experience of the players, but it can take anywhere from 90 minutes up to three hours.

Given the intensity of the engagements, this game is perfect for two players. If you want to add more, keep in mind that maybe the best option is to divide the gametable in "sectors", one for every two players.

The game is divided in two parts. The Approach Phase and the Engagement Phase.

The Approach Phase is a fast pace game where the defender (if any) deploys his forces, and the attacker (or both players, in the case of "Encounters") plans and executes the approach. This phase ends when one of the players asks to do so because the enemy is in his Line of Sight.

When the Approach Phase ends, the Engagement Phase starts.

The Engagement Phase is where all the combat takes place. This is not a IgoUgo game. Every turn is divided in as many rounds as needed, and in every round, both players can use part of their forces alternatively.

1.3.3. The battlefield

Keep in mind that the times when the wargaming battlefields were flat and boring (maybe with some "Old Style" hills) are gone. Now we can play in 3D battlefields, with gentle hills, shallow valleys, creeks and wide rivers you need to cross with boats or bridges, so now you can (and probably should) use these terrain features to protect your forces against enemy observation or gunfire. The term "defilade" again makes sense.



The rules have been designed to handle nearly every possible combat situation, so don't worry if you find systems to fight in low visibility conditions - due to darkness, smoke or haze - or to approach the

target quietly in order to avoid detection. We provide easy to use mechanics to handle "Visibility", "Sound" and "Combat Awareness" in the game, but this doesn't mean that you need to know them.

They are there if you need them, but you can enjoy many games without the need to use these systems.

1.3.4. The environment

In Rattenkrieg! a figure, vehicle and a crewed weapon represent exactly what you see. Where possible, even the weapons, equipment - and in some cases even the stance - of the figures should correspond to those to be represented in the game. The distances and objects have the same scale (1:56 for 28mm, 1:72 for 20mm and 1:100 for 15mm). For 28mm we recommend individual 20mm bases.

With regards to the battlefield, a 4'x6' table means a combat area of 123 yards (112 meters) x 184 yards (168 meters) and a 6' x 8'; 184 yards (168 meters) x 245 yards (224 meters) in the real world. Bear this in mind whenever you see a gun in front of you.

Timings, however, are more abstract. Before the actual combat starts, while the units move in the "Approach Phase" each turn can represent from 30 seconds up to a few minutes. This means that for the first turns the players have a lot of freedom to move their forces until the first units are detected and the fun begins as soon as you start playing. When the forces start to fight and fast decisions need to be taken, each turn can represent between 20 and 40 seconds, depending on the complexity of the fight and the actions taken. For this reason, we ask you to open your mind and be flexible when it comes to determine "what could be done in X seconds"; the

game has been designed to adapt especially to experience these stressful moments that seem to last forever and those that occur in seconds, and to get rid of the boring minutes when nothing happens.

1.4. Game terms

1.4.1. "Elements"

When we talk about "vehicles" we mean not only those used on land (wheeled or tracked), but also planes, gliders, boats, landing crafts. etc. In the rules, an "Element" is every figure, fire team, support weapon, leader, squad or vehicle that can be controlled by the players.

1.4.2. "Quality"

Each figure has two characteristics; "Quality" and "Aggressiveness"; but don't worry, you will not need to use markers to keep track of these data because they are already printed in the Scenario or in the Order of Battle.

The "Quality" value is fixed and represents something much more generic than that implied by word and encompasses concepts like commitment to the cause, patriotism, self-sacrifice and, of course, combat Quality.

It tells us how many actions the figure can do in a turn (in other words, how many things it can do).

The normal value for an average soldier is three. Higher values don't mean that the figure is faster doing things, it simply means that the figure knows what to do and how to do it, so the higher the position in the chain of command, the higher the "Quality" value. Sometimes this value is also used (against a D6) to know if a task (such as to fix a jam in a machine gun, or to spot a hidden enemy) will be successful or not.

1.4.3. "Aggressiveness"

The "Aggressiveness" value is given in the scenario and may change over time, depending on the situation.

It tells us the disposition of a soldier to use a weapon against another man with the aim of killing him, of his own free will.

The average value (for the men who fought in the Second World War) is two and most of the times is used - against a D6 - to know if an isolated soldier, or detachment (out of sight of his leader) will fire an aimed shot against an enemy (with a roll equal or less than his "Aggressiveness") or if he will just pull the trigger in the general direction of the enemy (with a roll bigger than his "Aggressiveness"). Some situations and factors can reduce this value down to zero (which means that the soldier is in panic) or increase even beyond six (which means that the soldier becomes bloodthirsty and is out of control).

1.4.4. Smart scenery"

We tried to create a combat environment as close to the real one as possible in order to offer the players the same challenges faces by the Second World War officers and NCOs.

For example, in one scenario, the attacking player could find himself forced to face the following terrain.



As you can see, there are no signs of enemy presence. But lets take a closer look at one of these bushes.



In fact, most of them are “boxes” where the defender can hide his troops inside, waiting for the perfect moment to ambush the attacker forces.



Nearly anything can be a piece of Smart Scenery. A destroyed tank may hide an MG team. So look twice before send your troops to the battlefield.



1.4.5. “Mojons”

During the Approach Phase, the players will need markers that will be used as “waypoints”, defensive positions or decoys. We call them “Mojons” and we will talk about them later. They can be of any shape or size, but some of them will need to have numbers on them. The defender will use the “Mojons” to mark the defensive positions and which elements are assigned to every position, and the attacking player will use them to mark on the table the path every unit will follow.



Keep in mind that the defender may hide “Mojons” inside pieces of Smart Scenery. Once the combat starts, and the Approach Phase is finished, almost all the “Mojons” are removed from the table.

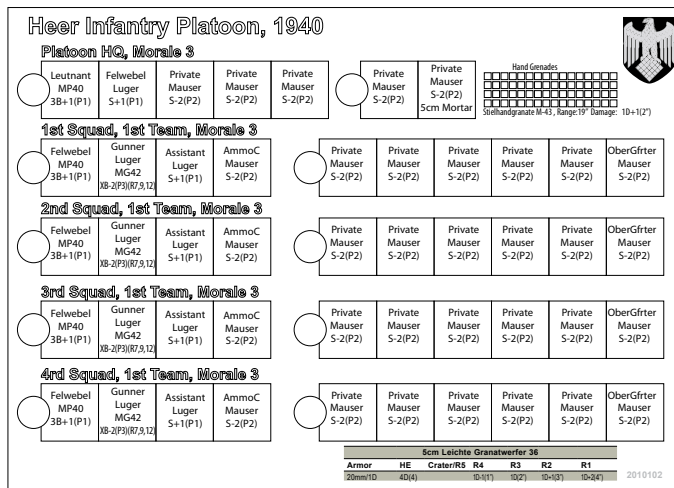
1.4.6. Tactical orders

The Tactical Orders are special markers used to assign orders to the elements in each turn. We will explain their use later. There are three types, but they should all look the same on the back; on the front, one will show something that means “Movement”, another will show something meaning “Fire” and the third type is used to foul (or ambush) the enemy and should be numbered.



1.5. Orders of Battle (ORBAT or OoB)

Every unit deployed in the game will have an “Order of Battle” where the player will find all the information needed to play, from hierarchical organization, command structure, strength, disposition of personnel, and unit equipment and gear, along with the data needed to play. The players will use the OOB to keep track of casualties, changes in Aggressiveness or status, etc..



1.6. The units

You can play with only three figures (the surviving crew of a downed bomber) or land in a remote island with a reinforced company of US Marines... The “proportionality” of the rules allows you to focus on details only when needed, so you can completely ignore the rules about “Sound” or “Visibility” when fighting a battle on a sunny day or you can play with the shadows and try not to cough while trying to infiltrate behind the enemy lines.

During the game, you can handle your units in the way you want. Maybe in one turn you will move forward a full platoon as a whole and the next one you will move the same platoon by squads, fire teams and even maybe detach a scout.

1.7. Command and control

The limits of command and controls depend on the capacity of the leaders to reliably issue orders - by voice, signs, whistle, or other means - to their troops, so that in every situation the effective command distance may vary. For instance, in an urban area, with partially collapsed buildings, haze and the

sound of the roaring tank engines, the command distance will be much shorter than if the unit is moving through a quiet prairie. Forget the “clumps” of soldiers around the squad leader and forget the “unit cohesion” rules. Simply keep your men in sight of the leader, or close enough to hear his whistle or see the flare.

1.8. About armor

Usually armor thickness is considered the most important factor when it comes to defeating a tank, but the slope is at least as important as the thickness, not only because it increases the chance of a bounce, but because it makes the armor plate work like a much thicker one.

So, for example, when a shell impacts on an armor plate with a thickness of 100mm with a slope of 0 degrees, it must pierce only 100mm to reach the other side. But if the same plate is at a 45 degree slope, the same shell will need to pierce 141mm. But if we shot the same shell against the plate sloped at 45 degrees, and from one side (another 45 degrees), now it must go through 200mm of armor. This is called “relative armor”, and you will find that this is a very important question when you fight against armored vehicles in Chapter 9.

1.9. Gun Sights: To Hit or not To Hit?

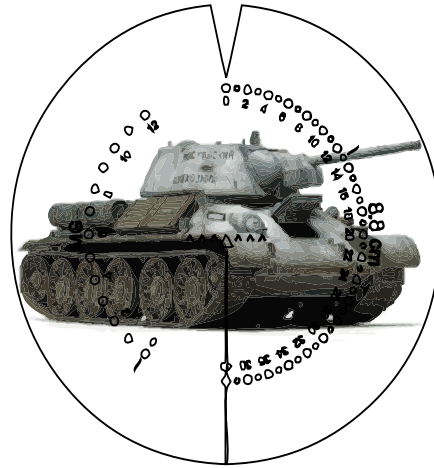
This is the question. In many games, you need to roll in order to know if the shell you shot with your tank hits the enemy or not. This makes sense in small scales, when the enemy is more than three hundred yards away. But in Rattenkrieg! the average combat distance is between 50 and 150 yards. Maybe 200 yards playing with 15mm models.

So let’s take a look at what a gunner sees when he aims the gun. We used a Zeiss sight used in the Tiger I tank as template, but other tanks sights will look quite similar to this one.

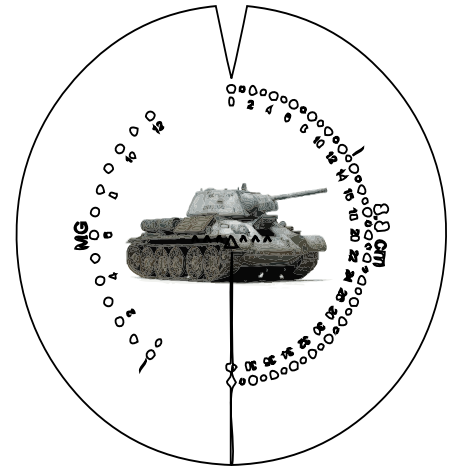
And we simulated what the gunner should see if the 1:56 T-34/76 enemy tank was 50, 100 and 200 inches away in our battlefield. As you can see, is not easy to miss the target. In fact, we gave more “weight” to the speed of the target for this reason. When the target is so close, the biggest challenge is to follow the target.



T-34/76 50 inches away



T-34/76 100 inches away



T-34/76 200 inches away

1.10. The effects of weapons in Rattenkrieg

We based the casualty system of the game (and many of the modifiers used in it) on the information given by official military reports.

Historically, the common belief was that about the 80% of the casualties in combat were caused by mortars, but it seems that the origin of this idea comes from the fact that the data was collected from the second echelon hospitals, where only wounded men were taken. Nobody asked about the dead.

In Europe, the moving front didn't give time to study the corpses. But in the Pacific, the very nature of the war created the perfect conditions to learn more about what really happened in the battlefield. When the fight was over, and before the units left the island to fight again, there was time to discover more about the worst face of combat.

So we studied the data gathered and organized by Ashley W. Oughterson, M.D., Harry C. Hull, M.D., Francis A. Sutherland, M.D., and Daniel J. Greiner, M.D. The Bougainville Campaign is - of course - a very different kind of war than the one fought in Europe, because the Japanese had a very special military doctrine (not to mention the use of their MG, tanks and artillery) and the nature of the terrain was quite peculiar. But the combats were fought at very close range, and even taking into account that the Japanese weapons were different to the German or the Soviet ones, the effects were nearly the same when used at close range.

"Information regarding the circumstances of wounding in the living is relatively easy to obtain. Frequently, the facts may be elicited by an interview with the person wounded. However, the information will be still more accurate if checked with an eyewitness. To secure accurate details concerning the dead, however, is much more difficult. Post mortem examinations should be done, of course, whenever possible. Autopsies, however, were limited by the fact that all bodies could not be recovered and also by the fact that some were decomposed when recovered. Unfortunately, rapid deterioration occurs in the tropical climate of Bougainville, and for sanitary reasons the dead must be buried as soon as possible. The dead, when recovered, frequently exhibit wounds other than those which produced death. Wounds inflicted after death were especially common in areas subjected to concentrated artillery or mortar fire. Furthermore, it was often difficult and frequently impossible to identify the lethal weapon from the appearance of the wound or the missiles recovered at autopsy. In many instances, discrepancies were found when the emergency medical tag, hospital record, and post mortem findings were compared. It became apparent, therefore, that the true sequence of events leading to death could be secured only by careful personal questioning of witnesses who saw the soldier killed or who knew personally of the circumstances surrounding his death. By adhering to this method of investigation, a relatively high degree of accuracy was achieved, not only in the records of the dead but also of the living". "Wound Ballistics", Medical Department, US ARMY, P.313

This is what we learnt from this study and the basis of our casualty system.

It is possible that the MGs and grenades were more lethal in Europe than in the Pacific. Also, the statistical data suggests that, when the combat is fought at less than a few hundred yards, the anatomic location of wounds is critical.

The head or the legs gets hit as many times as the chest and abdomen together. And the chance of death is one third. A wound in the extremities rarely means death.

I would like to end this note with the following quotation from the same report.

"Records show that 90 percent of the dead killed by bullets were hit at ranges under 100 yards (about 65" playing with 28mm figures). Furthermore, many of these bullets had low velocities because they had passed through brush or trees. Mortars and artillery seldom killed at distances greater than 10 yards from the burst, and close to 100 percent of casualties from these weapons occurred at less than 50 yards. No records are available that show men killed at distances greater than 5 yards from a grenade burst.

Over 75 percent of casualties killed by fragments from mortar and artillery shells were less than 10 yards from the source of the fragments.

Over 80 percent of casualties killed by fragments from hand grenades were less than 3 yards from the detonation". "Wound Ballistics", Medical Department, US ARMY, P.273

1.11. Routing or breaking contact?

In Rattenkrieg! there are no "shocks" or routed units. Probably the concept of units "running away" from the battlefield is a legacy from other wargames based on other historical periods where there was no military justice or court-martial and people simply walked away when they had had enough of war.

But in Rattenkrieg! only irregular units may leave the battlefield without permission. All the other elements, must perform their duty and obey orders or they will face a charge of "misbehavior before the enemy" or cowardly conduct. The only way to withdraw a unit or element from the battlefield is to use a higher authority to issue such order to that unit.

9 • Routing or breaking contact?

But of course, a unit can be rendered unable to keep fighting, but this doesn't mean that that unit is removed from the table. More often than not, that unit will become a new problem to solve.

1.12. Rattenkrieg! features

Prisoners and interrogation, war dogs, room to room combat, landings, air landings, cavalry, bicycles, demolition, damage to buildings, boats, combat psychology and much more.

1.13. Promotion Points

These are points awarded for authenticity and respect for the military doctrine. They are awarded in situations where irrespective of the odds and outcome, importance is given to the veracity of the situation and circumstances, be it through your army, weaponry or combat procedure.

I always asked myself why people spent lots - and I mean LOTS - of hours painting even the minutest detail on the uniforms of the figures (and vehicles) they use, detailing every shoulder patch, weapon, etc... but, when it comes to fighting on the table, they use each of these figures in exactly the same way, irrespective of whether they are German Volksgrenadier, USMC Raiders, Japanese Jungle Fighters or even Vikings or zombies.

They make "herds" of troops and, ignore the very basic notions of fire and maneuver, or the recommended space between men and units, or the way they fought in combat. They move these herds across the battlefield shooting everyone in sight until they have caused enough damage to be able to run away, leaving behind their comrades and the battlefield.

I know we are here to have fun and to overcome challenges, but what we are using are figures that resemble men (and women) who lost their lives - or part of it - and their innocence for their countries and their families, and I think we - all of us, as a human race - should at least to try to show some respect for their sacrifice.

Of course, this set of rules can be played in the habitual manner: You are given a scenario, you take the objective and you overcome the enemy. You will enjoy a few hours of fun, in the same way (or hopefully even more so) as with other sets of rules.

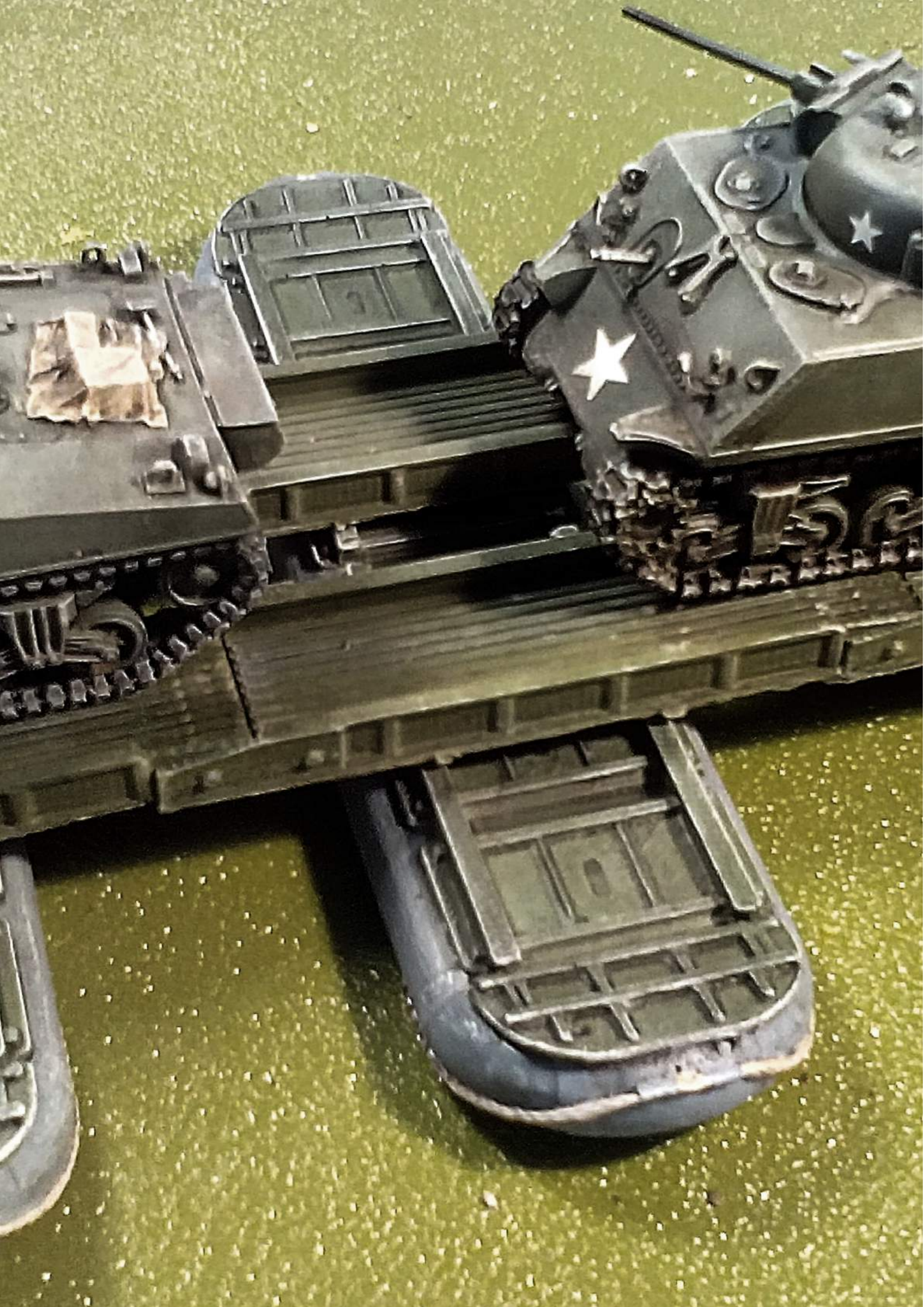
However we would like to propose you try something different. The ultimate goal of course, is the same, to seize the objectives and to force the enemy to move out of his current positions, but the most important thing is how this is done. You earn "Promotion Points" for carrying out your job exactly as the forces your figure represents on the game table would have done.

For example, if you are a German Leader, you earn PP if you simultaneously use one fire team to suppress the enemy with machine gun fire, while the other advances. If you are a Japanese Leader, you earn PP every time a machine gun opens fire at very close range (ten inches), or displaces to a new position every time it fires three magazines, and if you are a US Army Leader, you earn points for each enemy unit you spot using your scouts, before starting to fight.

Only in very few cases will you get PP for killing the enemy, but most of the time you will get negative PP for losing your men in battle.

These "Promotion Points" are not comparable with the ones earned by the enemy, these are used to measure your behavior as the leader of a military branch of the military forces of a nation. In the near future, you will be able to update this information on the www.rattenkrieg.com to keep track of how you are progressing.

Alf M Comps



Line of Sight and Visibility
Cover and Concealment
Spotting an enemy
Field of View (Optional)
Sound (Optional)
Multiscale Games

THE ENVIRONMENT

IN THE COURSE OF A GAME MANY DIFFERENT SITUATIONS ARISE WHERE IT WILL BE EVIDENT IF AN ELEMENT CAN DETECT THE ENEMY OR NOT, OR WHAT EFFECT THE ENVIRONMENT MAY HAVE WHEN FIRING AT HIM.

2. LINE OF SIGHT AND VISIBILITY

2.1. Line of Sight and Visibility

When doubt arises because there are objects between two elements that may block their line of vision (such as a stone wall), we refer to Line of Sight (LoS). In case of doubt due to any other cause, such as rain, vegetation, lack of light, we refer to "Visibility".

2.1.1. Line of Sight (LoS)

To spot or fire at a target, the target must be in Line of Sight (or LoS). An element is considered in LoS when an enemy element can trace a line of sight to that element, no matter if that element is far away, under cover or concealed. Lines of sight are calculated from the head or vision port (in the case of a vehicle) of the firing or spotting element, up to any point of the target element's base. Any piece of scenery (terrain, buildings or vegetation) higher than the location of these elements and which blocks the firing line or sight between the two elements, is considered an obstacle for the LoS.

When an element is adjacent (but not in contact) with an obstacle, we assume that element can see and fire over that obstacle. Friendly and enemy infantry elements do not block LoS. Artillery and vehicles do block LoS.

When it comes to differences in height, we need to address new LoS problems, because the height difference between two points can cast a longer or shorter "observation shadow", depending on the distance.

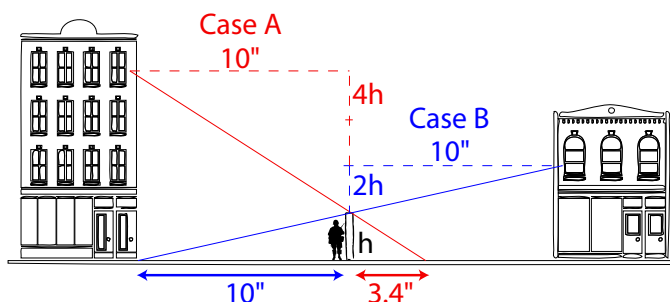
Where, for example, an element is trying to shoot from a window (on a second floor) against an element that is moving behind a fence, you simply measure the height of the fence and the height of the window. Let's say that the fence measures 2" and the window is 6" high, and the distance between the building and the fence is 10". In the table, you will see where the window is "three times higher" than the fence, the "shadow" is calculated by multiplying the distance by 0.5. Therefore if the target is less than 5", there is no LoS and the element can't fire at it. (In fact, to be physically accurate, this distance should be halved for people not in prone position, but we have tried to keep the calculations as simple as possible).

LINE OF SIGHT ("Shadow Distance")	
The point of view is __ than the target	Shadow distance in inches
5/4 higher	4 x Distance
4/3 higher	3 x Distance
3/2 higher	2x Distance
Twice higher	Distance
Three times higher	0,5 x Distance
Four times higher	0,34 x Distance
Five times higher	0,26 x Distance
Six times higher	0,2 x Distance

Other examples

Case A: The window is four times higher than the fence, and the distance is 10", so the "shadow" is 3.4" (0.34×10).

Case B: The window is two times higher than the fence, and the distance is 10", so the "shadow" is the same as the distance, 10".



2.1.2. Visibility

Often, combat situations do not take place on a clear and bright day, but with the enemy hiding in the shadows of a ruined building, and the men who make up an element, walking through a jungle, hampering their coordination.

2.1.2.1. Inconspicuousness (or I-Factor)

In each of these cases, a value is assigned to indicate the "Inconspicuousness" of a figure (or element) from another. This is called the I-Factor and it depends on how the environment or surroundings help to hide that figure or element from the view. The greater the I-Factor the more difficult it is to see that figure. The upper limit of the I-Factor is 36; when a figure reaches an I-Factor of 36, it is impossible to see it.

2.1.2.2. Visibility Condition

On a clear and bright day, visibility is virtually unlimited. But at night, or when there is fog or rain, visibility is reduced and a distant object is much harder to distinguish than a close one. The Visibility Condition measures the “opaqueness” of one inch of the space that separates two elements or figures. Therefore, on a very clear and luminous day, the Visibility Condition is zero; The Visibility Condition in a slight haze would be one, and in the interior of a forest or at night, the Visibility Condition would be five.

VISIBILITY CONDITIONS	
Situation	Visibility
Clear day	0
Haze, Dawn, Dusk, Light Rain, Dust, Shadow	1
Before dawn, After dusk, Rain, Indoor	2
Heavy rain, Snowing, Fog, Bushes, Light Forest	3
Moonlit night, heavy Fog, Heavy snow, Forest	4
Night, Dense Forest, Snow Storm	5
Dark Night, Tunnel, Cave, Jungle, Tall crops	6
Smoke and Dust (see “30.2. Smoke and Dust Clouds (Optional)” on page 131)	Variable

When visibility is not good, the problem is made worse by distance; So that the further an object is, and the more “opaque” the area (greater Visibility Condition), the greater the I-Factor value will be

because we must multiply both values. (The Visibility Condition is cumulative, so if at night (Visibility Condition 5) fog gathers, (Visibility Condition 1), the Visibility Condition would be six.

Example: If one figure tries to see another that is two inches inside a forest (Visibility Condition of five), the I-Factor of the figure that is in the forest, will be ten (2x5). If that figure is moved two inches further into the forest, its I-Factor would increase to 20 (4x5).

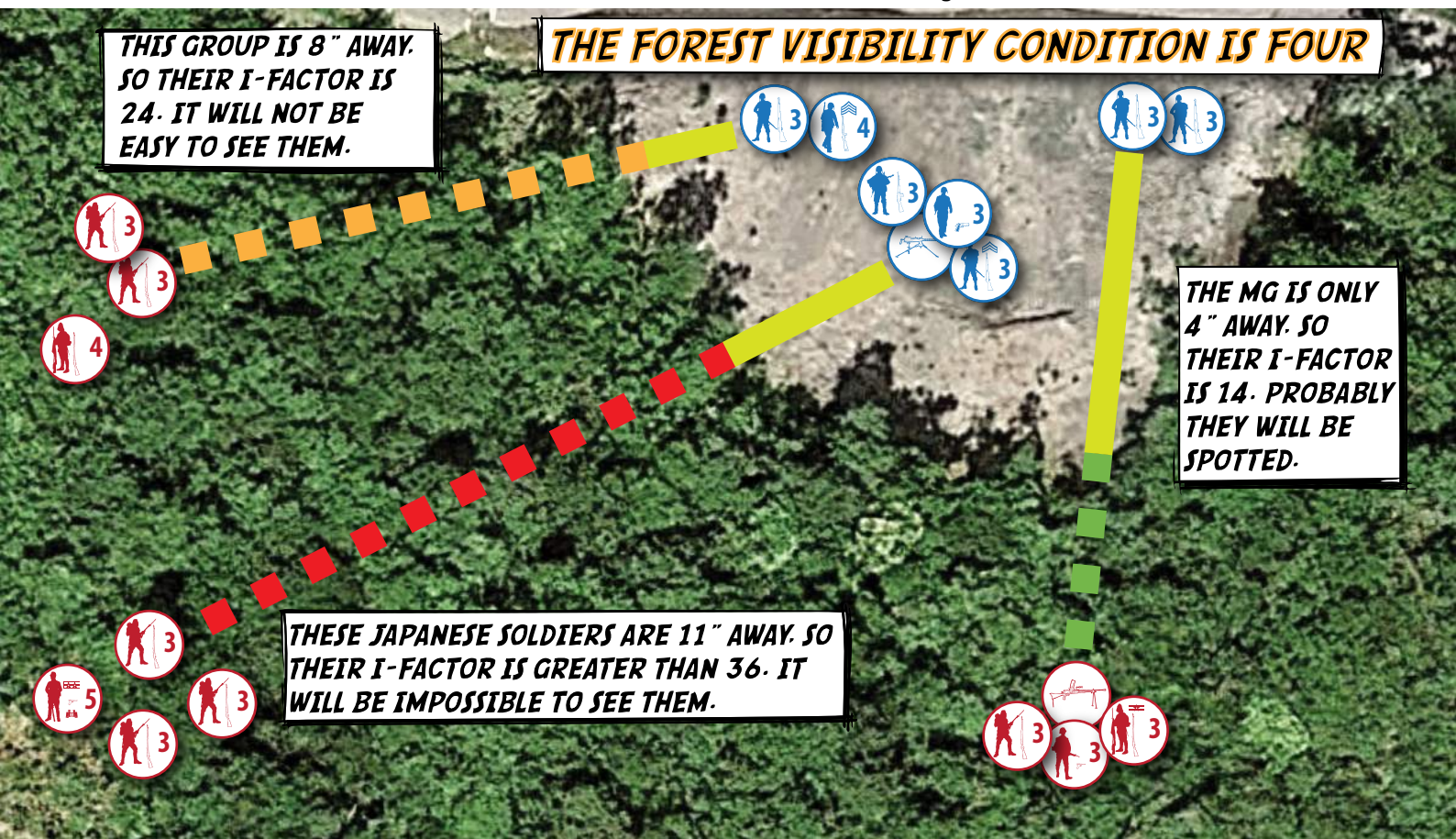
There comes a time when a figure (or element) has an I-Factor of 36; that makes it invisible to the naked eye.

2.1.3. Effects of I-Factor on Spotting

When you try to spot an enemy, its I-Factor is one of the factors that frustrate this task, to the point of making it impossible.

2.1.4. Effects of the I-Factor on the Command

When the figures that make up an element are within an area with a Visibility Condition greater than zero, they may have visual control problems (voice control or whistling is not affected by Visibility). For visual orders to be communicated, the I-Factor between adjacent members of the same element cannot be greater than 36.



3. COVER AND CONCEALMENT

3.1. Cover

The cover is a numerical value that can be positive or negative and usually depends on the level of a figure's protection. Normally Cover is the protection provided by an obstacle that can stop the enemy fire, although this may also be due to the position of the target, or visibility.

3.1.1. Cover obtained by Obstacles

When a figure takes cover behind an obstacle capable of stopping fire, its level of protection depends on the surface area of its body still exposed. Any object (even a stone below knee level) provides a +1 cover. This is to show that the fighter is trying to protect himself as much as possible behind this object.

When the figure exposes only part of the torso and head, the figure obtains a cover of +2.

When the figure exposes only part of his head, it provides a cover of +3.

Evidently, the cover offered by an obstacle depends on the penetration level of the weapon with which it is fired. Thus, a brick wall will provide cover against weapons with a penetration equal to or less than 3 (as we will see in Combat - The penetration in combat fire), but not against weapons able to penetrate that obstacle.

Water counts as impenetrable Cover against bullets and shrapnel.

“Cover is protection from the fire of hostile weapons. Concealment is protection from observation or surveillance from hostile [...] observation, but not from hostile fire.”

MCWP 3-11.3 Scouting and Patrolling, US Marine corps

3.1.2. Cover due to Combat Stance

All the figures engaged in combat are considered under cover because we assume all of them are trying to stay alive, and they will move and behave cautiously. So, as long as a figure is in “Combat Stance”, it will be considered “under cover”.

The only figures that don't benefit from this type of cover are those that claim cover by obstacles and those unaware of their enemy's proximity, or those run-

ning, climbing, jumping, stunned, or wounded, as they are considered not to be actively working for their safety.

But the Combat Stance has some particularities.

A figure will be given +1 only if:

- The figure is fighting or ready to fight
- The figure does not benefit from any other type of Cover because of an obstacle between it and the firing weapon
- The fire is head on (in 180° arc marked by the gun if it is being fired or the position of his head if it is not)

Combat Stance will give a figure 0 if:

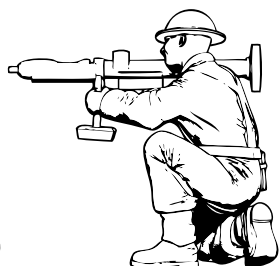
- The figure is not fighting (not alert, wounded, hunkered down or stunned)
- If the firing is sideways on (see diagram, positions marked with a zero)

Combat Stance is negative when the figure receives fire from behind (see diagram)



Cover -1

(Combat Stance)



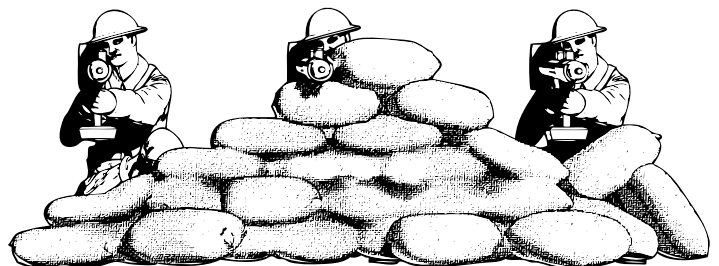
Cover 0

(Combat Stance)



Cover 1

(Combat Stance)



Cover 1

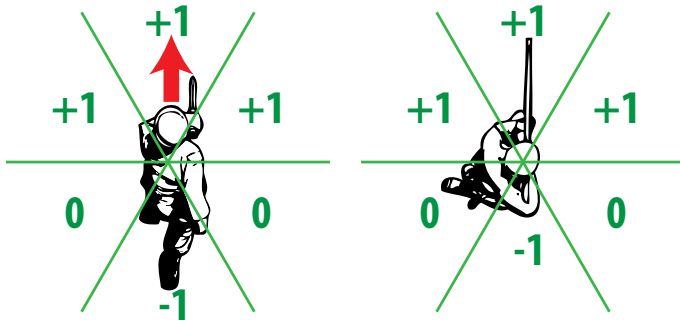
(By Obstacle)

Cover 3

(By Obstacle)

Cover 2

(By obstacle)



3.1.3. Cover due to I-Factor

When an element is not clearly visible (that is, it has an Inconspicuousness greater than zero), it has a +1 Cover.

When an element is not visible (for example, the enemy knows that it is inside a wooden hut but can not see it), it is considered to have a Cover of +2.

3.2. Concealment

An element that is hidden behind a window, or in the shade or with its base in contact with trees, shrubs, hedges or fences, is considered to be hidden from sight and therefore is Concealed. This, in addition to providing a +1 Cover makes it difficult to detect.

3.2.1. Undetected, Located and Identified Elements

In Rattenkrieg! An element can be in three states; Undetected, Located, and Identified.

3.2.1.1. Undetected

An element is Undetected while it is on a defensive Mojon (a “Mojon” is a special marker that tells us where an element is) that has not been stopped during the approach phase. No firing of any kind can take place against an Undetected element. The player who controls the element can, should he wish to, arrange the figures (to move, for example), but the Mojon must always accompany the leader (or main figure).

While an element stays Undetected, its Mojon is not upside down.

3.2.1.2. Located

An element is considered Located when:

- It is assigned to a pathway Mojon that has been stopped during the approach phase
- It has been successfully spotted, but has avoided the spot in extremis (this will be explained in the next chapter, “4.1. Spotting” on page 18)
- If it opens fire

A Located element can only receive area fire or speculative fire (basically, instead of having casualties, its number of actions is reduced). When an item is Located, the leader (or main figure) is placed on the table.

To indicate that an element has been Located the Mojon is turned upside down.

3.2.1.3. Identified

An element is considered Identified when it has been spotted and its attempt to remain hidden has failed.

When an element is identified, the player must deploy the figures assigned to that element on the game table. The Mojon is removed.

An Identified element can receive fire normally.

3.3. Breaking Contact

A Located or Identified figure or element can try to move to where the enemy can not see or use direct fire against it.

To do this, the figure or element must find a position where the I-Factor is bigger than 36 and must remain in that situation for a whole turn. During that time, it can receive fire, but with the benefit of being considered “not visible” (a Cover of +2).

Once the figure or element spends a whole turn with an I-Factor bigger than 36, it is considered Undetected regarding the Visibility. Of course, if the figure opens fire, or if the element is a vehicle, the weapons or engine sound could disclose/giveaway its position.

4. SPOTTING

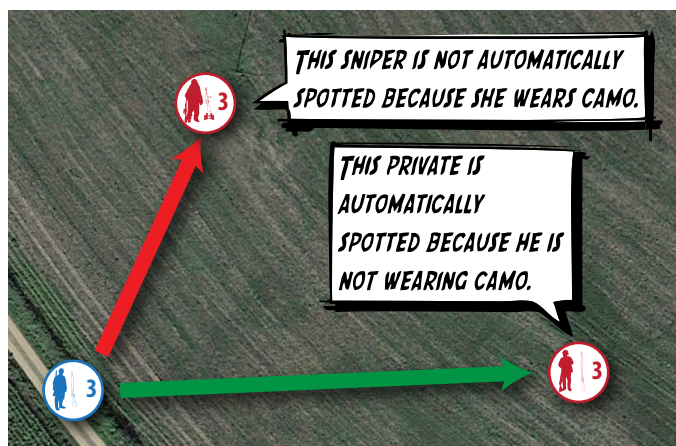
4.1. Spotting

To fire at an enemy element, it must have been Located and Identified.

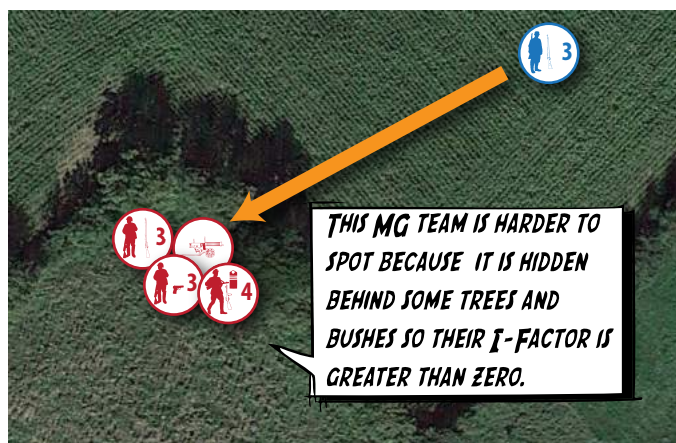
To spot an element, the spotter rolls a die, and the result must be equal or lower than a given value.

This Spotting Value, for an element that is in the open, without camouflage and in full view, is a six.

For this reason, obviously, any element that is in the open, without camouflage and in full view, does not require a die roll because it is considered spotted automatically, as you would have to roll between one and six with a die of six. An element that has been automatically spotted is considered an "Acquired Target" and can be fired at in the same action/impulse in which it was spotted (this is important in the case of cannons or tanks, as we will see later).



However, there are circumstances that can complicate spottings, such as the distance, the I-Factor (or Inconspicuousness), and height difference with the element you are trying to spot, as these circumstances will lower the Spotting Value, making the spotting more difficult.

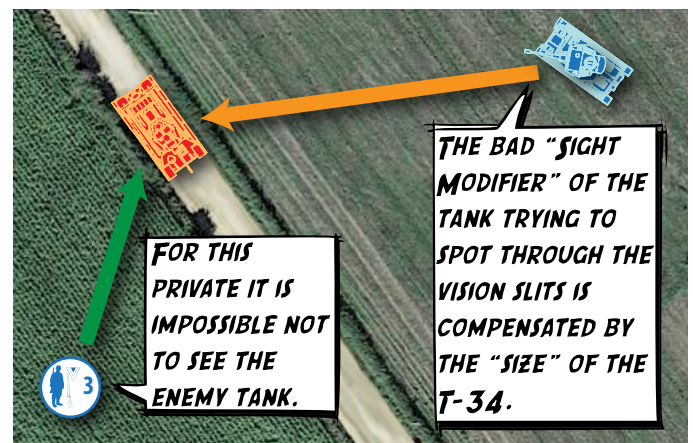


This is where the Quality of the spotter becomes important as we will divide the sum of all these values by the quality of the spotter. In these situations, you have to roll a die. Each of these adverse circumstances - which are cumulative - meaning that it will be spotted with lower and lower numbers when we roll the six-sided dice.

$$A = \frac{\text{Distance} + \text{I-Factor} + \text{Positive Height}}{\text{Spotter Quality}}$$

For example, we add up all the inches of difference in height (let's say they are two) all I-Factor points (due to bad weather, sunset, etc., let's say there are four) and all hundreds of inches of distance between spotter and spotted (let's say one), which gives us a total of (2 + 4 + 1 =) seven, and we divide it by the quality of the spotter (which was three) resulting in TWO. This means that the element would be spotted if the dice shows any value between one and four (6-2)

On the other hand, other circumstances facilitate the location of what you want to spot and that is also cumulative, the size and position of the object (if it is in a lower position than the spotter's position).



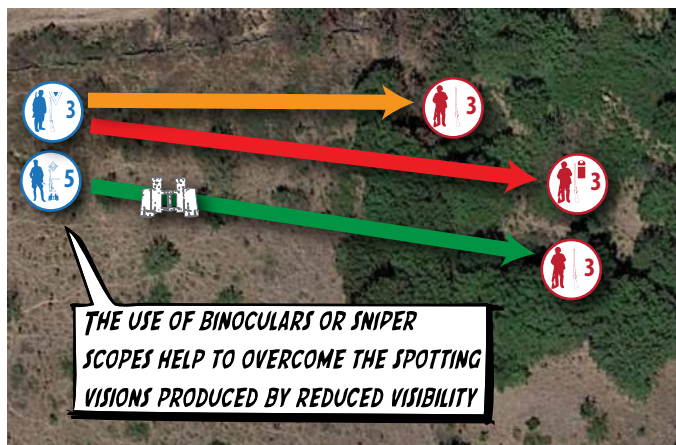
In these cases, we divide the sum of all values between the quality of the element to spot. This helps to raise again the values that allow the enemy to be spotted when we roll the six-sided dice.

$$B = \frac{\text{Size} + \text{Negative Height}}{\text{Target Quality}}$$

For example, we add the size of the element to be spotted (zero for troops) and the height advantage, and divide it between the Quality of the element that we want to spot, (still three), giving us one. This means that the element would be spotted if the dice shows any value between one and five (6-2+1).

But the one value that is not divided is the Scope modifier (or "Sight Modifier," when it comes to vehicles). The magnifications of the scope (say we use a 3x, i.e., three) are added, and should they be negative (when trying to spot through a tank vision slit, it is usually negative.) These values are added or subtracted directly from the die value.

**The Die Roll must be equal or lower than
A - B + Scope Modifier or Sight Modifier**



Finally, the moment of truth arrives, and we throw the die. Let's suppose we throw a two, given that this is between one and five, it means that the element has been spotted. The element's leader is placed on the table (and if there is a mojon, it is turned upside down), but the rest of the figures are not yet placed on the board as for now the element has only been Located.

Even so, there is a possibility that the element to be spotted can avoid being seen enough so that effective fire can not be shot at it.

However, in order for this to be possible, the element must fulfill at least one of the following conditions:

- the element must be under cover (i.e., it has Cover not through Combat Stance)
- the element has camouflage uniform and "added foliage"

- the element is a camouflaged vehicle with "added foliage" and its engine is turned off

So if at least one of these conditions is met, it can throw a die to avoid being located and identified. Simply add the corresponding cumulative values as set out in the following table to the Cover value:

SPOTTING MODIFIERS BY CAMOUFLAGE	
Situation	Modifier
Standard Uniform	0
Camouflaged Uniform	+1
Camouflaged Vehicle	+1
Added Foliage, helmet	+1
Vehicle partially covered by added foliage	+1
Added Foliage, uniform	+1
Vehicle fully covered by added foliage, FAO	+2
Sniper	+3
Vehicle covered by Camouflage Net	+3
Ghillie Suit	+4

For example, if it is in Cover +1, wearing camouflaged uniform (+1) and foliage (+1) and also close up to a few shrubs (Concealed, i.e. +1), add 1 + 1 + 1 + 1 = 4. If between one and four is rolled on the dice, it has avoided effective fire, and you can only fire at it speculatively

However certain actions mean that even the best-camouflaged figure in the world is easily identified. If a figure moves, uses a whistle, shouts an order or shoots, it will have negative modifiers on the roll to avoid being spotted as in the following table, until the next action.

SPOTTING MODIFIERS BY ACTIONS	
Situation	Modifier
Moving cautiously	0
Moving, Throwing grenade	-1
Running, Moving over ruins	-2
Giving orders, Shouting, Using whistle	-2
For each shot or burst	-2
Other element is designating the target	-2

Thus, even a sniper (+3 according to the table on the previous page) equipped with a Ghillie Suit (+4 according to the same table) could only make three shots (-2x3) before being almost as exposed as a normal infantryman).

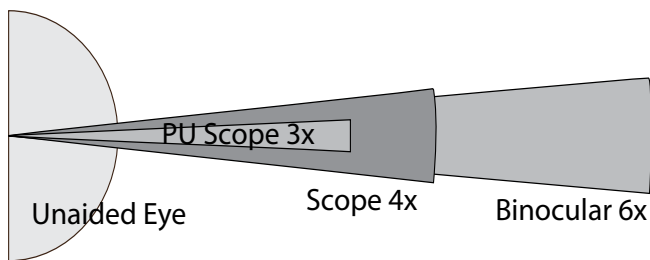
5. FIELD OF VIEW (OPTIONAL)

5.1. Field of View (Optional)

To be able to see something, it needs not only to be “in range”, but also the figure must be looking at it. By default, the field of view of a figure extends 180 degrees, so a figure can see everything in the direction his nose is pointing.

But as soon as it starts to move, and while the figure is moving, the field of view extends to 360 degrees.

Only figures designed as sentinels and the leaders have a 360 degrees vision when they are not moving.



Optical devices, like binoculars or sniper scopes, may extend the Sight Threshold several times (up to six for binoculars) but in return, their field of view is reduced.

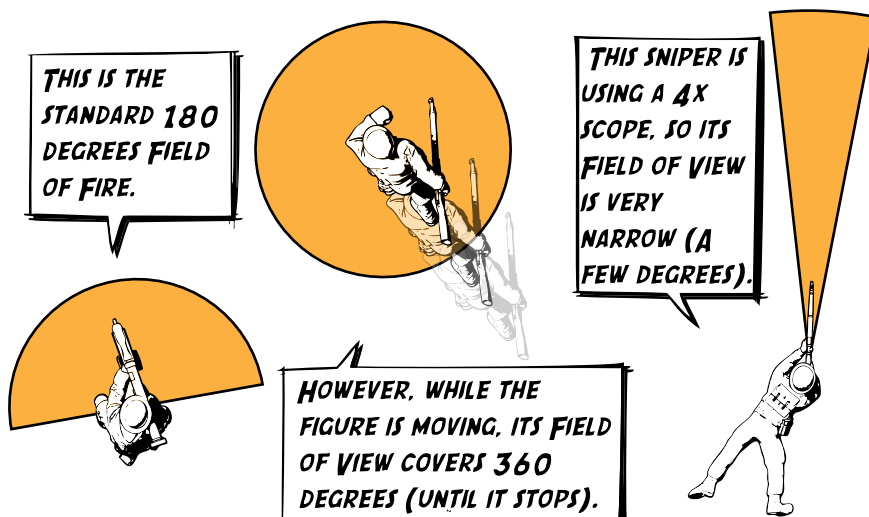
When this is the case, the figure using these visual aids will be able to see much further, but it will become unaware of everything that happens just a few inches away from the object or figure it is observing.

To avoid measuring angles, we provide a table with ranges (in inches) and the width of the Field of Vision for three of the most common visual aids; the 3.5x scope, the 6x binoculars and the 4x scope. Simply find the range you are aiming and in the corresponding column, find the width of your visual aid.

For example, the Field of View of a PU scope at 130" will be 9.4" width. In combat, this means that you need to position your men very carefully in order to be able to react to enemy movements.

FIELD OF VIEW OF BINOCULARS, SCOPES & SIGHTS

	PU Scope	Binoculars	Scope
Range	4.5° (3x)	9° (6x)	11° (4x)
5"	0.4	0.8	1.0
10"	0.8	1.6	1.9
15"	1.2	2.4	2.9
20"	1.6	3.1	3.9
25"	2.0	3.9	4.8
30"	2.4	4.7	5.8
35"	2.8	5.5	6.7
40"	3.1	6.3	7.7
45"	3.5	7.1	8.7
50"	3.9	7.9	9.6
55"	4.3	8.7	10.6
60"	4.7	9.4	11.6
65"	5.1	10.2	12.5
70"	5.5	11.0	13.5
75"	5.9	11.8	14.4
80"	6.3	12.6	15.4
85"	6.7	13.4	16.4
90"	7.1	14.2	17.3
100"	7.5	15.0	18.3
110"	7.9	15.7	19.3
120"	8.6	17.3	21.2
130"	9.4	18.9	23.1
140"	9.4	18.9	23.1
150"	10.2	20.5	25.0
160"	11.0	22.0	27.0
170"	11.8	23.6	28.9
180"	12.6	25.2	30.8
190"	13.4	26.8	32.7
200"	14.1	28.3	34.7
225"	14.9	29.9	36.6
250"	15.7	31.5	38.5
275"	17.7	35.4	43.3
300"	19.6	39.4	48.1
325"	21.6	43.3	53.0
350"	23.6	47.2	57.8
375"	27.5	55.1	67.4
400"	31.4	63.0	77.0





6. SOUND (OPTIONAL)

6.1. Sound (Optional)

The battlefield, as a sonic landscape, is as complex as changing. The sound - as a physical phenomenon - works in a very particular way, so, implementing its behavior into a wargame is not as straightforward as it was to handle the visibility.

Do not worry, probably you will not need to check the "Sound Damping Table" in normal games; we included it for hardcore players, or to play in very special scenarios.

In the rules, we will use the same sound measure we use in real life, the db (or decibel). In the next page, we list several sounds and their corresponding value in decibels.

In every scenario, there is a "by default sound level," for example, 40db (a city with some breeze, and perhaps some environmental sounds). This means that ear can not detect all the activities that produce a sound below 40db, and that the louder activities will stop being noticeable when their sound damps to 40db.

For example, a car cruising (60db) will only be noticed when it gets closer than 10".

6.1.1. Standard Sound Levels (Optional)

We have three standard sound levels, "Q" for "quiet", the kind of sound you could hear in a very quiet night in a desert - about 20db; "N" for "Normal", the sound you hear when you walk along the street - about 40db and "C" for "Combat"; with occasional distant burst of shots, voices, steps, etc. - about 60db.

6.1.2. Sound damping (Optional)

The sound transmission is affected by space, but not in a linear way. This means that a soft sound dampens much earlier than another one slightly stronger. For example, a sound with a power of 40db will dampen to 20db in only ten meters; but a sound with a power of 45db will be reduced to 20db in eighteen meters; and one of 50db, in 33 meters.

Also, when a sound passes through a material, it dampens, depending on the thickness and physical properties of the material through which it must pass.

In the game, we simply subtract the Sound Transmission Loss from the db that reach the obstacle/surface.

SOUND TRANSMISSION LOSS	
Building Element	db
Stone, concrete, wall or floor	60
Double brick wall	50
Brick wall, heavy wood wall or floor	45
Wood wall	40
Studwork and plasterboard	35
Wooden door	25
Armor plate (vehicle)	10
Every inch of tall grass, bush, jungle	1

For example; if a figure is using a whistle (110db) twelve inches away from a house with a wood wall, this means that only 89db reach the wall. The STL of the wood wall is 40, so we get 49db (89-40), rounded to the closer value of the table, so 50db. In an environment of 40db, this means that the whistle sound will be heard only up to 3" from the wood wall.

When it is cold, or it rains, the sound travels better. In such cases, simply add 2" in case of cold weather (below freezing point), and another additional 2" if it's raining.

6.1.3. Adding noise sources (Optional)

As with the dampening, there are special rules when it comes to adding more noise to the existing one.

The addition is not linear, but logarithmic, so if one man is walking, his boots will produce a noise of about 40db. However, when two men are walking, the combined noise is not 80db (40+40), but 43db. Ten men will produce a noise of only 50db, one hundred men walking will make a sound of 60db, and one

thousand, only 70db. And nearly the same will happen for much louder noises. So, basically, the increment works like this, independently of the power in db of the sound source:

ADDING NOISE SOURCES			
# of sources	db	# of sources	db
2	+3db	10	+10db
3	+4db	15	+11db
4	+6db	20	+14db
5	+7db	50	+16db
6	+8db	100	+20db
7	+8db	200	+23db
8	+9db	500	+27db
9	+9db	1000	+30db
10	+10db		

EXAMPLES OF SOUNDS				
Sound	db	Q	N	C
Normal breathing	10	-	-	-
Woodland (silence)	15	-	-	-
Quiet level	20	-	-	-
Whisper	30	3"	-	-
Normal level	40	10"	1"	-
Steps, walking	45	18"	2"	-
Rainfall	50	33"	3"	-
Steps, running	55	59"	6"	-
Car engine, idle	55	59"	6"	-
Jump	60	105"	10"	1"
Combat average level	60	105"	10"	1"
Car engine (cruise)	60	105"	10"	1"
Powerboat low	60	105"	10"	1"
Inside a tank	70	∞	34"	3"
Light tank	70	∞	34"	3"
Halftrack	70	∞	34"	3"
Voice	70	∞	34"	3"
Car engine (climbing)	75	∞	54"	5"
Raised voice	75	∞	54"	5"
Loud voice	80	∞	92"	10"
Cough, laugh	80	∞	92"	10"
Medium tank*	85	∞	188"	18"
Shouting	90	∞	∞	33"
Hammer	90	∞	∞	33"
Heavy truck*	90	∞	∞	33"
Firing a Flare	90	∞	∞	33"
Aircraft piston engine	90	∞	∞	33"
Heavy tank*	100	∞	∞	105"
Motorcycle	100	∞	∞	105"
Car horn	110	∞	∞	∞
Dog barking	110	∞	∞	∞
Powerboat high	110	∞	∞	∞
Woman screaming	115	∞	∞	∞
Rock drilling	115	∞	∞	∞
Building collapsing	120	∞	∞	∞
Siren	120	∞	∞	∞
Thunder	120	∞	∞	∞
Whistle	130	∞	∞	∞
Hand grenade	140	∞	∞	∞
Rifles, MGs	130	∞	∞	∞
Handguns, SMG	130	∞	∞	∞
Guns, HMGs	177	∞	∞	∞
Hiroshima Atomic Bomb	248	∞	∞	∞

(*) When the engine is idle, subtract 10db. When the vehicle is climbing, add 10db



THE GAME

Actions and Reactions

Mojons

Approach Phase

Tactical Orders

Engagement Phase

IN RATTENKRIEG! THERE ARE TWO DIFFERENT TYPES OF MARKERS; “MOJONS” AND “TACTICAL ORDERS”. IN THIS CHAPTER YOU WILL LEARN WHAT THEY ARE, WHAT THEY REPRESENT AND HOW TO USE THEM IN THE GAME.

We have no time to waste. Every minute we devote to the actual game is precious, and is usually preceded by many hours painting miniatures and thinking about what we will do and how to do it. The first times we tested the engine, we needed at least fifteen minutes to start the combat so we felt quite frustrated. Maneuver is critical, and we loved to see how our plans developed up to the first, unexpected contact. But this vital and complex process should be solved faster albeit keeping the spirit and very nature of the tactical approach.

We decided to speed up the process while avoiding the “God’s Eye” effect. The action should look as pre-planned, and the units should be committed to some missions before the first enemy pops up. After some tests, we found a reasonable solution: To divide the game in two phases. The Approach Phase and the Engagement one.

During the Approach Phase we use something we call “Mojons”, and during the Engagement, “Tactical Orders”

7. ACTIONS AND REACTIONS

7.1. Actions

We call “action” each of the activities that a figure can do in the game. Some require rolling a die to know if they have succeeded (like forcing a door), others are automatic (like shouting), and a few of them will force the player to roll a die to determine the possible outcomes (like jumping or shooting a weapon).

Each figure is allowed a limited number of actions per turn, depending on its Quality and rank. So most of the times the figures will have three actions per turn, and their leaders will have one or two more.

Some actions can be performed only when the element has a Fire Tactical Order (marked as “F” under the “Type” column), others only with the Movement Tactical Order (marked as “M”) and others with any Tactical Order (marked as “A”).

There is only one action that can be done even when a figure runs out of actions to use: Hunker Down! To Hunker Down is free, and most of the times is the only way to survive, but to rejoin the fight costs two actions.

Sometimes several figures may use their actions, collectively, to perform a task, like pushing a gun or laying mines.

For example, to lay a mine may require 21 actions, three figures may use seven actions each to finish the job in a couple of turns.

7.2. Reactions

The Reaction is the tool that allows a non-active player to play when the enemy is executing actions with their active elements.

It uses up one action.

A vehicle or figure can react as long as an enemy figure or vehicle enters their field of view or performs an action that triggers noise or a visual signal that reveals their presence.

When an element reacts to an element, it must execute actions related to that enemy, at least in the first action/impulse after the reaction.

An element can not react to another friendly element.

LIST OF ACTIONS

Action	Type	R	Alarm Range		
			Q	N	C
Reaction	A	N	-	-	-
Reaction Without Tactical Order	-	N	-	-	-
Rejoin the Fight from Hunker Down!	A	Y	-	-	-
Aim	F	N	-	-	-
Provoke the enemy	A	Y	∞	∞	∞
Reconnaissance by fire	F	Y	∞	∞	∞
Shoot	F	Y	∞	∞	∞
Shoot against a Leader (1)	F	Y	∞	∞	∞
Suppressive fire	F	Y	∞	∞	∞
Throw Molotov Cocktail	F	Y	∞	34"	3"
Throwing Grenade	F	Y	∞	10"	1"
Fight	F	Y	∞	34"	3"
Spot	F	N	-	-	-
Give/Change order	A	Y	∞	92"	10"
Make signal	A	Y	V	V	V
Quiet gesture, signal	A	N	-	-	-
Shout	A	Y	∞	∞	33"
Use the whistle	A	Y	∞	∞	∞
Board/unboard vehicle or craft	M	Y	105"	10"	1"
Cautious movement	M	N	10"	1"	-
Climb	M	Y	33"	3"	-
Jump/Fall	M	Y	105"	10"	1"
Move injured	M	Y	105"	10"	1"
Movement	M	Y	18"	2"	-
Run	M	Y	59"	6"	-
Rush	M	Y	105"	10"	1"
Swimming	M	Y	59"	6"	-
Demolition (1)	M	Y	∞	∞	∞
First-aid	M	Y	10"	1"	-
Force Door/Window	M	Y	∞	92"	10"
Make a loophole (1)	M	Y	∞	∞	33"
Open/Close/Use door	M	Y	33"	3"	-
Picking up the weapon of a corpse	M	Y	4"	-	-
Push/use/set/break object	M	Y	V	V	V
Repair	M	Y	∞	92"	10"
Searching for booby traps (1)	M	Y	18"	2"	-
Setting booby traps (1)	M	Y	18"	2"	-

(1) Not in reaction.

Normally, the fire weapons shoot projectiles that travel at a speed higher than the speed of sound; that is the reason why a figure is not allowed to react against “fire” by an enemy that was already prepared to shoot, or against the first rounds of an automatic weapon burst.

Some actions never trigger a reaction, they are marked with a red “N” in the “R” column of the List of Actions Table.

Though this is not free. The “Reaction” costs one action if the element is deployed in the table and ready for combat, or two in all the other cases. In addition, many actions, when performed as reactions, have a penalty. This penalty represents the fact of carrying out an action hastily; but logically, the penalty only applies to that action, not to the effects of such action, and not to the following actions performed after a reaction.

The capability of reaction is a great tool to try to stop a smart and surprising maneuver of the enemy, that’s all.

7.3. About Measuring during the game

By default, players can not measure before performing an action. However, they may agree to allow only one measurement per action if they want.

Speculative Measuring (using the measuring tape to chose between several targets, or to find the perfect spot to hide an element, or to know if a figure will reach exactly that specific cover, etc.) is strictly forbidden.

Besides that, a player in a defensive role may have a map with measurements, and he can check it as many times as he wants.

7.4. List of actions

Here we will describe all the possible actions, their cost and the distance they can be heard in a quiet environment (Q), a normal one (N) or in combat conditions (C).

Boat and vehicle crews have more actions available, but this will be discussed in Vehicles.

7.4.1. Reaction

Reaction is the simple act of reacting against the action of an enemy figure. Includes a change of facing and position if needed.

Cost: 1 action

Triggers alarm: NO

7.4.2. Reaction without a Tactical Order

This is the same as Reaction, but when the element reacts from a Mojon or without a Tactical Order. Includes a change of facing and position if needed.

Cost: 2 actions

Triggers alarm: NO

7.4.3. Rejoin the Fight from Hunker Down!

A figure Hunkered Down must use two actions to be able to fight again.

Cost: 2 actions

Triggers alarm: NO

7.4.4. Aim

Increases the chance to hit the enemy. Subtract one from the die. It must be followed by another “Aim” or a shot. Aims are cumulative, even for the next turn, up to a maximum of three.

Cost: 1 action

Triggers alarm: NO

7.4.5. Provoke the enemy

The figure does something unaimed, but spectacular enough to provoke a response of the enemy, thereby giving away his position. After this, the figure Hunkers Down automatically.

The closest enemy element rolls a die and if he gets more than the Quality of the troops, he has to react against the provoking element.

Cost: 1 action

Trigger alarm: YES

7.4.6. Reconnaissance by fire

The figure opens fire against an opening (door, window, mousehole) or an area of 2” x 2” per each die of shooting of his weapon (for example, a submachine gun could check for enemy presence in an area of 6” x 2”). The inactive player rolls a die and if he

gets more than the Quality of the troops, he has to declare that there are troops of his own in that area, although he is not obliged to say the number nor the type of troops.

Cost: 1 action

Triggers alarm: YES.

7.4.7. Shoot

Shooting with a weapon.

Cost: 1 action

Triggers alarm: YES.

7.4.8. Shoot against a Leader

Shooting with a weapon against an officer. Can not be done as a reaction. The officer must be identified before shooting as explained in "15.17. Identifying a Leader (Optional)" on page 74.

Cost: 1 actions

Triggers alarm: YES.

7.4.9. Suppressive fire

The figure opens fire against an opening (door, window, loophole, ruins) or an area of 2" x 2" per each die of shooting of his weapon (for example, a submachine gun with three dice could suppress enemy figures in an area of 6" x 2"; for machine guns, the value specified in the "React" column).

All the areas must be adjacent (forming a row, "L" shaped line or a rectangle, a "stair", but no diagonal). The figures that are in the area under suppressive fire must pass a Quality check, if they fail, then they use up an action automatically to get cover. There is no limit to the number of times an element can be suppressed in a turn.

Cost: 1 action

Triggers alarm: YES.

7.4.10. Throw a Molotov cocktail

The thrower is exposed during this action, so its Combat Stance is reduced to zero.

See Grenades.

Cost: 1 action

Triggers alarm: YES. Fire and smoke depending on the building. It can be heard throughout the table in a quiet environment, from 34" in normal one and from 3" during combat.

7.4.11. Throwing Grenade

The thrower is exposed during this action, so its Combat Stance is reduced to zero.

See Grenades.

Cost: 1 action

Triggers alarm: It can be heard throughout the table in a quiet environment, from 10" in normal one and from 1" during combat.

7.4.12. Fight

Fighting without guns.

Cost: 1 action

Triggers alarm: YES. It can be heard from all the table in a quiet environment, from 34" in normal one and from 3" during combat.

7.4.13. Spot

Try to spot a hidden enemy. See "4.1. Spotting" on page 18. Can not trigger a Reaction.

Cost: 1 action

Triggers alarm: NO

7.4.14. Give/Change an order

A Leader can Give (or Change) orders to elements - or part of elements if they can be detached - under his command during a Round. To do this, put a Tactical Order beside the element or Change the one already placed.

Cost: 1 action per Tactical Order, requires a Quality Check on each element that receives the signal to obey the order.

Triggers alarm: YES, according to type; If it is visual and can be seen by an enemy unit. Voice; Q:∞, N:34"; C:3". Loud Voice; Q:∞, N:92", C: 10". Shouting; Q: ∞, N; ∞, C: 33". Whistle, ∞.

7.4.15. Make a signal

Launching a flare, using a flashlight, calling by radio or using a field telephone to send a signal to another unit. This action allows a Leader activating another unturned Tactical Order of an element under his command as long as the element is capable of receiving the signal.

Cost: 1 action, requires a Quality Check on each element that receives the signal to obey the order.

YES, according to type; If it is visual and can be seen by an enemy unit. Voice; Q:∞, N:34"; C:3". Loud Voice; Q:∞, N:92", C: 10". Shouting; Q: ∞, N; ∞, C: 33". Whistle, ∞. Firing a flare; Q: ∞, N; ∞, C:60".

7.4.16. Quiet gesture, signal

Sends a message or a signal to the figures within sight and looking at the emisor. This action allows activating another unturned Tactical Order as long as the element is capable of seeing the emitter.

Cost: 1 action per element activated, requires a Quality Check on each element that receives the signal to obey the order.

Triggers alarm: NO

7.4.17. Shout

Sends a message or a signal to the figures that are less than 20" (or in a three spaces radius in a building), independently of where they are facing. If in that turn combats occurred, a die must be rolled to see if the order has not been silenced by the noise of the shooting (D6, success with 1 or 2). This action allows a Leader activating another unturned Tactical Order of an element under his command as long as the element is capable of hearing the shout.

Cost: 1 action, requires a Quality Check on each element that receives the signal to obey the order.

Triggers alarm: YES, Q: ∞, N; ∞, C: 33".

7.4.18. Using the whistle

Sends a pre-accorded message or a signal to the figures within range (most of the time, the whole table), independently of where they are facing. The whistle is not affected by combat sound but requires a Quality Check on each element that receives the signal to obey the order. This action allows a Leader activating another unturned Tactical Order of an element under his command as long as the element is capable of hearing the whistle.

Here are some examples of available Whistle Signals.

WHISTLE SIGNALS (GERMAN)	
Meaning	Sound
Alarm	Continuous Blast
Assemble	Three Long Blasts
Move Out/Attack	One Long Blast
Withdraw	Two Long Blasts
Right Flank Pull In	One Long and One Short Blast
Left Flank Pull In	One Short and one Long Blast
Shift Right	One Long and Two Short Blasts
Shift Left	Two Shorts and One Long Blast
Assemble on Leader	One Short One Short One Long
Regroup	Four Short Blasts

Cost: 1 action, requires a Quality Check on each element that receives the signal to obey the order.

Triggers alarm: YES.

7.4.19. Board/unboard vehicle or craft

The figure is exposed during this action, so its Combat Stance is reduced to zero.

This action is the one used when a figure must pass through a hatch, small door or scuttle, or mount or dismount a horse, or board/unboard a small craft (like a raft or boat with high gunwales).

If the passenger has been moving with the vehicle, they lose an action per every impulse the vehicle moved.

Cost: 1 or 2 actions

Triggers alarm: Paying one action, YES, Q:105", N:10"; C:1". Paying two actions, NO.

7.4.20. Cautious movement

Advance carefully 2" (this does not prevent from activating traps but avoids being detected by sound). A figure advancing in this way has the "Cover" and "Camouflage" benefit as we assume its high or low crawling.

Cost: 1 action

Triggers alarm: NO

7.4.21. Climb

The figure is exposed during this action, so its Combat Stance is reduced to zero.

A figure can climb a fence/wall/cliff up to an inch high in an action as long as there are ledges, he uses a rope, or is helped by his comrades.

Cost: 1 action

Triggers alarm: YES, Q:33", N:3"; C:-.

7.4.22. Jump/Fall

The figure is exposed during this action, so its Combat Stance is reduced to zero.

In some cases it is necessary to jump from an upper storey to a lower one, or a figure falls from some height when he is forced to fall back. In these cases injuries can occur and the player has to roll a D6. If the result is LESS than the number of inches of the jump's height, the figure gets disabled.

Cost: 1 action

Triggers alarm: YES, Q:105, N:10"; C:-"

7.4.23. Move injured

Moving a disabled man in combat conditions is risky and hard.

For one man, it takes one action to move an injured figure two inches, and the injured figure rolls a die to know if it survives, it will have a modifier of +1.

For two men, it takes one action to move an injured figure four inches, and the injured figure rolls a die to know if it survives, it will have a modifier of +2.

Cost: 1 action

Triggers alarm: YES, Q:3105, N:10"; C:-1".

7.4.24. Movement

Normal movement, 4"; on broken terrain (rocky, or ruins), throw a die and divide the result by 2, this will give us the number of inches the figure can move.

The action used up moving includes not only the change of location, but also the change in body position, so for example, a figure that starts in prone position, can stand up, walk four inches and go into prone position again using only one action. We assume that the figures always try to make use of the best cover available when they stop moving.

In difficult terrain (snow, tall grass, crossing a stream [up to knee level]) subtract one inch per action.

In extremely difficult terrain (wading a river, deep snow, tall crops [up to hip level]) subtract two inches per action.

In buildings, movement is easier. To enter a room, or to exit a room, use the stairs/ladders or to change position inside a room (with a surface up to 36 square inches) costs one action.

Cost: 1 action

Triggers alarm: YES, Q:18"; N:2"; C:- When moving on ruins or rubble, roll a die and divide the result by two, this is the number of inches the figure advances that action. With a six, the alarm is Q:105"; N: 10"; C: 1".

7.4.25. Run

The figure is exposed during this action, so its Combat Stance is reduced to zero.

Fast movement, 6"

In difficult terrain (snow, tall grass, crossing a stream [up to knee level]) or burdened, subtract two inches.

In extremely difficult terrain (wading a river, deep snow, tall crops [up to hip level]) or with a heavy and cumbersome burden, subtract three inches and roll a die, with a six, the figure fell and will stop moving this turn.

Running is not allowed on rubble or rocks.

A figure that ran the previous action fires with a modifier of +1.

Cost: 1 action

Triggers alarm: YES, Q:59", N:6"; C:-".

7.4.26. Rush

The figure is exposed during this action, so its Combat Stance is reduced to zero.

Fast movement, usually when chasing an enemy or trying to escape from a desperate situation. Roll a D6. The figure then moves twice that distance in inches. But there is a chance of falling due to urgent haste...

So in normal terrain, a roll of one, means the figure must roll in the Combat Table. The "Death" result means that the figure fell and accidentally shot himself (if he had a weapon, or simply wounded if he was unarmed), and the "Hunker Down/Stun" result is simply ignored.

In difficult terrain (snow, tall grass, crossing a stream [up to knee level]) or burdened, subtract one inch. In addition, a result of one means the figure must roll on the Combat Table.

In extremely difficult terrain (wading a river, deep snow, tall crops [up to hips level]) or with a heavy and cumbersome burden, subtract two inches. In addition, a result of one, means the figure must roll on the Combat Table.

On rubble or rocks, subtract three inches. In addition, a result of one or two means the figure must roll on the Combat Table (D-1)

Cost: 1 action

Triggers alarm: YES, Q:105", N:10"; C:1".

7.4.27. Swimming

The figure is exposed during this action, so its Combat Stance is reduced to zero.

A figure that enters deep water must get rid of the weapons (except bayonets or knives) and helmet before starting swimming. Swimming speed is 2" per action. Remember to apply any drifting related with the speed of the water.

Some situations require to roll a die per figure and turn to know if something happens to that figure, as shown in the table.

SWIMMING		
Situation	Trouble	With
Troubled water	Drown	1 (1st and 2nd action), 1,2 (3rd and 4th action), etc
Very cold water	Frostbite	1 (1st action), 1,2 (2nd action), etc
Infested water	Attack	1

When swimmers get out of the water after swimming in waters listed in the table, they will need to pass a Quality check if he want to run or rush for as many turns as actions they used swimming.

Cost: 1 action

Triggers alarm: YES, Q:105", N:10"; C:1".

7.4.28. Demolition

Setting demolition charges: the number of actions will depend on the number of charges used and their disposition. Once they are set, they only require one action to be detonated.

Cost: N actions

Triggers alarm: Setting them does not cause alarm. Detonating them does cause alarm.

7.4.29. First aid

See Medical Staff

Cost: 1 action

Triggers alarm: YES, Q:10", N:1"; C:-

7.4.30. Force Door/Window

The figure is exposed during this action, so its Combat Stance is reduced to zero.

Force a door or window using force (butt or kicking).

Cost: 1 actions

Triggers alarm: YES, Q:∞, N:92"; C:10"

Requires rolling a D6 to know if the attempt was successful (with 1, 2 or 3). If the window is protected with planks or sandbags, with 1 or 2, and if it is protected with planks and sandbags with 1.

7.4.31. Open/Close door

The figure is exposed during this action, so its Combat Stance is reduced to zero.

Open or close an unlocked door (in good condition)

Cost: 1 action

Triggers alarm: YES, Q:35", N:3"; C:-

7.4.32. Picking up the fallen man's weapon

When a figure is at less than an inch away from another that is fallen (be it friend or enemy), he can pick up his weapons and the ammunition.

Cost: 1 actions

Triggers alarm: YES, Q:4", N:-; C:-

7.4.33. Push/use/place/brake object

The sort of actions included in this point relate to interaction with objects found on the battlefield. For example, placing planks, a sandbag, moving a sofa to block a door, removing a stair railing, or some tilings to be able to observe the enemy.

32 • List of actions

The cost in actions depends on the size/weight of the object and the difficulty of the action. In general, everything that can be done in less than a minute and that involves objects which weigh less than 20kg, (moving a sandbag four inches) requires one action.

Objects that require two people to be moved (a sofa, a big table, a bed) or up to 60kg cost two actions (and normally two men too). For example, jobs like blocking a door by nailing planks would cost two actions.

Objects that require three or more men to be moved (a big closet, a piano), or up to 150kg, cost 3 actions. When in doubt, use common sense. If this fails, simply use a die to determine which player is right.

Triggers alarm: YES, average Q: ∞, N:92"; C:10"

7.4.34. Repair

Repairing or using hand tools to repair damage. The number of actions is given by the nature of the damage and its extent and it is explained at "22.1.6. Repairs" on page 104

Triggers alarm: YES, Q: ∞, N:92"; C:10"

7.4.35. Setting booby traps

Placing booby traps. The player draws a diagram which shows where the trap is and what type it is. He must lay a marker (it can be anything from a piece of a matchstick or paper to a small pile of rubble). We recommend putting several of these markers all over the place, of course.

For every booby trap, the player wants to lay, he must roll a die. If the result is equal or less than the Quality of the figure, the device explodes and the figure must check for damage.

There are three types of booby traps:

Area: They explode as soon as a figure gets closer than 1"

Line: They explode as soon as a figure crosses the line drawn.

Trap: They explode when a figure uses or moves the object (door, furniture, weapon)

All of them work like a hand grenade.

Cost: 3 actions

Triggers alarm: Placing them Q:18",N:2"; C:-
Detonating them does cause alarm.

7.4.36. Searching for booby traps

Searching for booby traps in a space requires rolling a die to know if the attempt is successful (with a die roll equal or less than the figure Quality). If traps are found, the player that placed them crosses out one in the diagram where it was drawn and states its type and location.




Cost: 3 actions

Triggers alarm: YES, Q:18",N:2"; C:-

8. MOJONS

8.1. Mojons

The Mojons are the tool to track the position of moving forces and to mark the position of the defensive ones during the Approach Phase. These Mojons are a special kind of markers that represent the different elements until they are physically placed on the table, so there are three different types of Mojons, depending on what they represent on the game table.

TYPES OF MOJONS	
Mojon	Elements
	Infantry Cavalry Artillery Vehicles with the engine turned off
	Soft skinned vehicles Half Tracks
	Tracked Vehicles Tanks Tank Destroyers SPGs

They need to be easily and univocally identifiable, so the easiest way to achieve this is simply to write a number on many of them.



8.1.1. How many Mojons?

The minimum number of Mojons is usually one for each NCO or officer, one for each support weapon, one for each vehicle that leads a convoy and one for each inert element (artillery piece without a crew, or groups of vehicles with the engine turned off).


The maximum depends on the structure of the force, and it is specified in the Order of Battle (as we will see later), plus one per vehicle and one per support weapon or inert element.

Defensive forces receive as many extra Mojons (to be used as decoys) as the Quality of the highest Leader in the force.

8.1.2. A peek into the Order of Battle

The Order of Battle will be explained in detail later in section “9.4. The Order of Battle (OoB)”, for the moment we will see how to use the the OoB and the Mojons to prepare the deployment of the force.

This is a typical OoB of an Infantry Platoon.

Heer Infantry Platoon (1940)										
Platoon HQ, Quality 3										
①	Leutnant MP40 3B+1(P1)	Felwebel Luger S+1(P1)	Private Mauser S-2(P2)	Private Mauser S-2(P2)	Private Mauser S-2(P2)	①	Private Mauser S-2(P2)	Private Mauser S-2(P2) 5cm Mortar	Hand Grenades Stielhandgranate M-43, Range:19' Damage: 10+1(2')	
1st Squad, 1st Team, Quality 3										
②	Felwebel MP40 3B+1(P1)	Gunner Luger MG42 XB-2(P3)(R7,9,12)	Assistant Luger S+1(P1)	AmmoC Mauser S-2(P2)	③	Private Mauser S-2(P2)	Private Mauser S-2(P2)	Private Mauser S-2(P2)	Private Mauser S-2(P2)	OberGfrter Mauser S-2(P2)
2nd Squad, 1st Team, Quality 3										
④	Felwebel MP40 3B+1(P1)	Gunner Luger MG42 XB-2(P3)(R7,9,12)	Assistant Luger S+1(P1)	AmmoC Mauser S-2(P2)	⑤	Private Mauser S-2(P2)	Private Mauser S-2(P2)	Private Mauser S-2(P2)	Private Mauser S-2(P2)	OberGfrter Mauser S-2(P2)
3rd Squad, 1st Team, Quality 3										
⑥	Felwebel MP40 3B+1(P1)	Gunner Luger MG42 XB-2(P3)(R7,9,12)	Assistant Luger S+1(P1)	AmmoC Mauser S-2(P2)	⑦	Private Mauser S-2(P2)	Private Mauser S-2(P2)	Private Mauser S-2(P2)	Private Mauser S-2(P2)	OberGfrter Mauser S-2(P2)
4rd Squad, 1st Team, Quality 3										
⑧	Felwebel MP40 3B+1(P1)	Gunner Luger MG42 XB-2(P3)(R7,9,12)	Assistant Luger S+1(P1)	AmmoC Mauser S-2(P2)	⑨	Private Mauser S-2(P2)	Private Mauser S-2(P2)	Private Mauser S-2(P2)	Private Mauser S-2(P2)	OberGfrter Mauser S-2(P2)
5cm Leichte Granatwerfer 36										
Armor	HE	Crater/R5	R4	R3	R2	R1				
20mm/1D	4D(4)		10-1(1)	10-2	10+1(3)	10-2(4)	2010102			

As you can see, the forces are divided into the smallest elements the players can use during the Approach Phase, and each element has a circle in front of it. These circles are there to write the Mojon number to which each of those elements is assigned.

In this example, the German player could have a maximum of ten Mojons (one per white circle), but he decided to use only nine. The Platoon HQ and the Mortar team will deploy together.

8.1.3. How to use the Mojons

During the Approach Phase, the Mojons can be used in several ways; to position elements in their defensive positions, to “move” an element from the entry point to its deployment area and to create a route that will be used by a convoy.

8.1.3.1. Mojons in Defense

By the very nature of the war, there are two very different situations when two forces clash. One of them may be defending its ground, or not.

When one of the sides plays a defensive role, the defending players must divide their forces and they must write down on the Scenario OoB Sheet which elements are assigned to which Mojons. Then they place all these Mojons in the areas they are allowed to deploy. They can conceal Mojons inside buildings or pieces of Smart Scenery. They may ask the enemy to leave the room while they do this.

Defending forces deploy all their static Mojons before the Attacking forces deploy theirs.

“No plan of operations extends with any certainty beyond the first contact with the main hostile force”

‘Über Strategie’ written in 1871 as part of *Militarische Werke*. **Moltke (1900, p.291-292)**

However, the Mojons that represent the entry point for the reinforcement of the Defensive forces are placed after all the Attacking forces Mojons have been placed.

8.1.4. The Mojon for moving forces

When attacking or moving forces, the numbered Mojons are used to indicate the point at which the elements assigned to them arrive on the game table. Every turn spent in the Approach Phase, a new unnumbered Mojon (or any marker) will mark the next position, creating a Pathway. This process continues until one of the markers when placed, is declared “Spotted” by the enemy (and thus removed from the table), or the controller player decides to stop advancing.

When a player uses unnumbered Mojons to mark a Pathway, the distance between them will depend on the type of forces moving along that Pathway. Infantry Mojons may be spread 5” to 10” apart, for soft skinned vehicles, from 5” to 30”, and for armored vehicles, from 5” to 20”.

When the Approach Phase ends, the numbered Mojon replaces the last unnumbered Mojon on the Pathway, and the remainder of unnumbered Mojons are removed from that Pathway.

In this way, the numbered Mojons are now placed in the last undetected position, ready to enter combat.

8.1.5. The Mojon for Convoys

When a player wants to create a Convoy, the procedure is very similar to the previous case. The numbered Mojons are used to indicate the point at which the elements assigned to them arrive on the

game table. Every turn spent in the Approach Phase, a new unnumbered Mojon (or any marker) will mark the next position, creating a Pathway. This

process continues until one of the markers, when placed, is declared “Spotted” by the enemy (and thus removed from the table), or the controller player decides to stop advancing.

When a player uses unnumbered Mojons to mark a Pathway, the distance between them will depend on the type of forces moving along that Pathway. Infantry Mojons may be spread 5” to 10” apart, for soft skinned vehicles, from 5” to 30”, and for armored vehicles, from 5” to 20”.

When the Approach Phase ends, the first numbered Mojon replaces the last unnumbered Mojon on the Pathway, and all the unnumbered Mojons remain in their current positions.

In this way, this Mojon represents the first vehicle, and each Mojon behind it represents another vehicle of the same Convoy. The player may decide to space more the vehicles (every two or more Mojons).

8.2. Rules about Mojons

On a Pathway where different elements advance, the last placed Mojon indicates the position in which the leading element appears. If there are more elements associated with the same Pathway, they can (at the player's choice):

- appear at the same point, one per turn
- be placed on the pathway in the ratio of one element per mojon (like a Convoy)
- If more than one element is assigned to the same Mojon, they will be deployed as a single element.

8.2.1. Deployment from Mojons

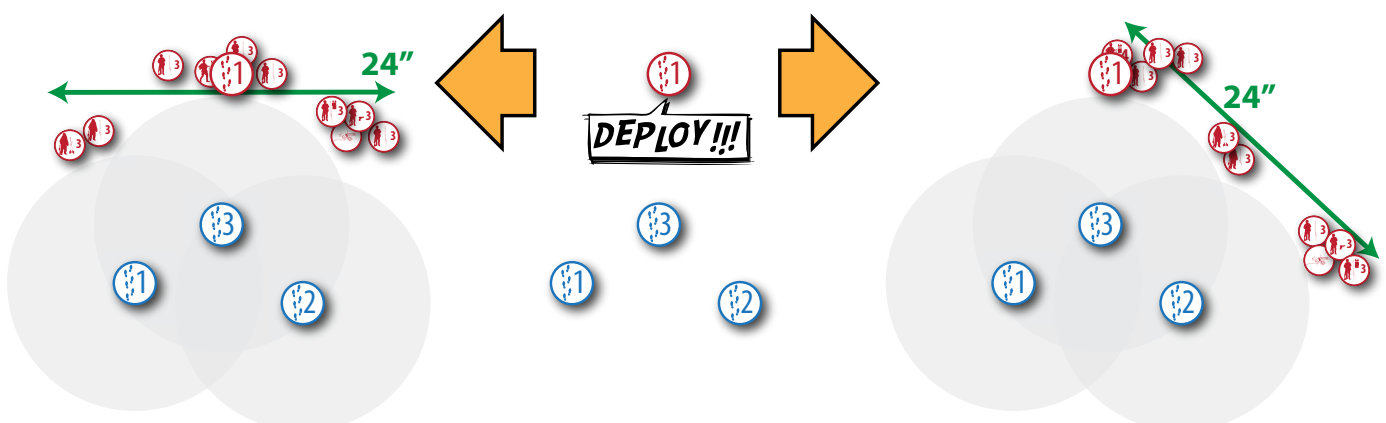
There comes a time when all figures that make up an element have to be displayed on the table.

If the element is Located, only the command or main figure (in the case of a support weapon) is placed where the mojon was. But if the element has been Identified, or the player wants to deploy it, in addition to placing the command or main figure where the mojon was, the player must also place all of the figures that make up the element on the table, in the following manner (see illustration below, where a red Mojon deploys).

8.2.1.1. Calculate the width of the deployment area

The number of figures that make up the element (leader included) is multiplied by the Quality of the element (not of the leader).

For example, if there were eight men with a Quality of three, the result would be 24. This is the number of head-on inches that that element will have.



The leader does not need to be in the center; the unit can be deployed perfectly sideways, or backwards, as long as the front does not exceed the calculated deployment front.

8.2.1.2. Check the distance to the enemy

No figure can be deployed closer to the enemy than the distance between the original mojon and the nearest enemy. This means that in some cases, a single element can “surround” an enemy who ventures too far into hostile territory.

8.2.1.3. Position the figures

Figures do not have to be equidistant. You are allowed to make groups, although it is recommended that all of them can receive orders from their leader so they can act using the same Tactical Order, to avoid problems with Aggressiveness and Fire Discipline.

Do not forget how visibility or noise may prevent part of an element from receiving an order from its leader, therefore losing a large part of its effectiveness. Remember that sometimes it is better to deploy in a less reckless and more controlled manner.

8.3. The Mojons after the Approach Phase

When the Engagement Phase starts, many Mojons will turn into elements and engage combat with the enemy. Although probably a few of them will be too far, or simply out of sight.

A Mojon can move by itself during the Engagement Phase as long as it remains undetected, but it has only one action, it can be used only to move, and the maximum distance depends on its type; up to 10” for infantry, up to 20” for armored vehicles, and up to 30” for soft skinned vehicles, boats, etc.



9. APPROACH PHASE

9.1. Starting the game

In this chapter you will learn how to start a game and how to use the Mojons during the Approach Phase.

9.1.1. Before Starting the Game

The players read their briefings, prepare the game table according to the scenario and take their Scenario Order of Battle (OoB) Sheets and the figures and vehicles they will use. The players determine which side will win the Initiative with 1, 2 and 3 and which will do it with 4, 5 or 6.

Every side decides how many Mojons they will use, and then writes down in the Scenario OoB Sheet which elements are assigned to which Mojons. These will be the Mojons they will place in the first turn to start the Pathways.

A game is fought over a number of turns determined by the scenario. The first turns will be very fast, as we will use them in the Approach Phase to deploy the forces until the first contact. Once the fight is imminent, the Engagement Phase starts, and the turns will be played in a sharply tactical way.

This means that if a scenario is ten turns long, and the players use four for the Approach Phase, they will have only six turns for the Engagement Phase.

The Approach Phase is where both sides deploy their forces and unfold their cunning plans, focused on the maneuver and the initial deployment in a very dynamic and fast way.

The Approach Phase ends before the first shot is fired. At this stage of the game, there are no figures or vehicles on the table; instead, we play using some special markers we decided to call "Mojons".

The Mojons system allows the game to be played very fast until initial contact, but be warned; this stage looks easy, but players should bear in mind that it is critical. A bad deployment or approach cannot be easily remedied.

9.2. The Approach Phase

As stated above, the Approach Phase focuses

on the maneuver and deployment of the forces. This Phase simulates the approaching between two clashing forces, or against a defensive position.

In order to represent the differences between these situations, we devised procedures comprised of four steps.

- Deployment of Defensive Forces
- The Approaching Turns
- Cleaning of Pathways
- Determination of Reinforcement Routes

9.2.1. Deployment of Defensive Forces

The defender players places all their Mojons inside the designated areas explained in the scenario. They can conceal Mojons inside buildings or pieces of Smart Scenery and they may ask the enemy to leave the room while they do this.



In this example, the Red side is in defense, so the player places one of his Mojons on his side of the map.

These Mojons can not move. This means that the Defending side only plays in the Approaching Phase immediately after it starts, and again just before it ends. While the enemy plays the Approaching Turns, the Defender side can only “stop” the enemy Pathways as soon as they enter in his field of view.

It is advisable to manage wisely the capability to stop the enemy Pathways.

9.2.2. Approaching Turns

Each Approaching Turn uses up one of the turns specified in the Scenario, so it is a good idea to keep this in mind.

9.2.2.1. First Approaching Turn

If none of the sides are acting as Defender, both place all their Mojons at the same time, at the points they want their forces to enter the game table (less than 1” from the border), alternatively, one at a time - if they have a similar number of Mojons - or proportionally - if this is not the case. The side with more Mojons starts first.

For example, if the Red side has six Mojons and the Blue one, eleven, the Red side will place one, and the Blue side, two until both sides are levelled, then both can place one at the time.



In this example, the Gray side is in attack, so the player places one of his Mojons in his side of the map.

9.2.2.2. Following Approaching Turns

At the start of the game, the players determined which side would win the Initiative with 1, 2 and 3 and which would do it with 4, 5 or 6.

However, in this Phase, we try to simulate the development of the combat plans devised by the highest leader present in the game, so both sides use the Quality of their corresponding highest leaders to get the Initiative each Approaching Turn.

So if the value of the Red side highest ranked Leader is five, and Blue side's is three, the die roll will be modified by the difference - two in this example. Now, the Red side will get the Initiative if the die roll result is between one and five, and the Gray side will get the Initiative only with a six.

The player who wins the initiative chooses whether to place one more unnumbered Mojon in each Pathway first or if he orders the enemy to place their Mojons in their Pathways. Once one side does this, the other side places all its Mojons.



After four Approach Turns, the Gray pathway is closing on the red Mojon.

When a Mojon is placed, both players check if they can spot any of the enemy Mojons or stop one of the pathways.



But the fifth one, the Gray pathway is in sight of the Red Mojon, now the Red player can stop this pathway, and he decides to do it. The Gray player can not add more Mojons to it.



A player may choose not to do so, perhaps letting them enter a killing zone. When a Mojon is spotted, or a pathway is stopped, the Mojon is turned upside-down. Later on, we will see why.

A Mojon is considered Concealed when it is inside an area with a Visibility Condition greater than zero, like a forest. A Concealed Mojon can spot but can not be spotted so they may stop other Mojons or stop pathways and still remain concealed.

One side may decide to stop adding Mojons to a Pathway. When this is the case, this “ending” Mojon is not turned upside-down.

Bear in mind that later, when the approach ends, the troops will appear close to the Mojon. In fact, the leader of the unit will physically substitute the Mojon, so think twice before placing it in a dangerous location.

Remember that the distance between Mojons assigned to infantry elements may be from 5” to 10” apart if the elements assigned were soft-skinned vehicles or cavalry, from 5” to 30”, and in the case of armored elements, from 5” to 20”.

When a Mojon enters a building, it needs one more turn to take positions in that building, so during that turn, it is unable to spot or stop any enemy Mojon.

When all the Pathways have been stopped, or both players agree to end the Approach, it comes to its end.

But the players need to make some adjustments before starting the combat. Remember that the first Mojon of each Pathway is the one with the number we used to assign elements to it.

9.2.3. Cleaning of Pathways

When a Pathway is stopped, this only means that the elements following that Pathway could not reach the position where the spotted unnumbered Mojon was located, and the units must be deployed in the previous one.

If a player stops a Pathway it simply means that the elements moving along that Pathway can't reach the position of the last Mojon undetected and they must appear in the previous one.

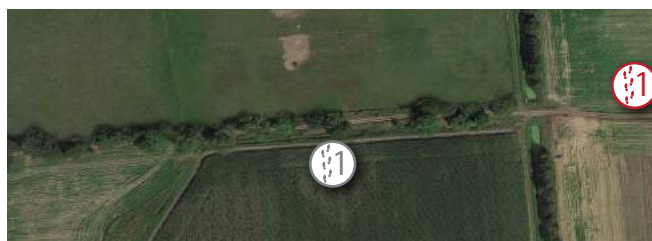
So, before starting the actual combat, both sides must prepare each Pathway.

9.2.3.2.1. End of Approach for Infantry Pathways

If an Infantry Pathway was stopped, the player removes the upside-down Mojon and replaces the last undetected Mojon with the first Mojon on the Pathway, removing the last one (that should be already upside down), and all the others used to define the Pathway.



The Gray player removes the last unnumbered Mojon, the one which was detected by the Red player and replaces the last undetected Mojon by the numbered one. Then removes all the remainder Mojons of the Pathway. The element will start the Engagement Phase in that position.



In other words, the whole Pathway disappears, and only one Mojon remains in the last undetected position. This will be the actual position of the element assigned to that Pathway. The Mojon is turned upside-down to show that it has been spotted.

If the Infantry Pathway was not stopped, the player replaces the last Mojon with the first one on the Pathway.

9.2.3.2.2. End of Approach for Vehicle Pathways

If a Vehicle Pathway was stopped, the player removes the upside-down Mojon and replaces the last undetected Mojon with the first Mojon on the Pathway. The Pathway now represents a convoy where every Mojon may represent a vehicle. The Mojon is turned upside-down to show that it has been spotted.

If the Vehicle Pathway was not stopped, the player replaces the last Mojon with the first one on the Pathway

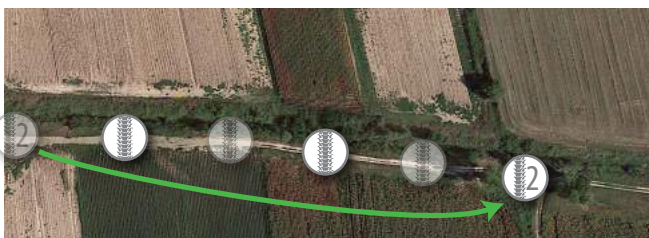
In our example, the Gray player wants to create a Convoy of armored vehicles, and he assigns two tanks and one SPG to the Mojon number two.



After several Approach Turns he decides that he does not want to keep advancing and stops adding unnumbered Mojons to the Pathway.



When the Approach Phase ends, he simply replaces the last unnumbered Mojon with the numbered one.



And decides to space the tanks two Mojons apart, instead of only one. As there are several kinds of armored vehicles in his Pathway, he must place numbered Mojons to clearly identify which vehicle is in which Mojon. In other cases, he could use the unnumbered Mojons.



9.2.4. Determination of Reinforcement Routes

If the Defender side has reinforcements, now he can place their Mojons inside the areas specified by the scenario. These Mojons will not be “active” until the turn when the reinforcements arrive and are not affected by the presence of enemy forces.

10. THE TACTICAL ORDERS

10.1. Tactical Orders

When the Approach ends and the Engagement starts, we incorporate a different set of markers called “Tactical Orders.”

These are the basis for the rules during the Engagement Phase because they provide you with an unparalleled flexibility to command your troops as with Tactical Orders you can divide and use your force dynamically during the game, detaching some men to cover their comrade’s advance using fire, start a Banzai human wave or just play defensively until your reserves arrive.

When engaged in combat, elements have only two possible orders; fire and maneuver or movement. We use two Tactical Orders for this purpose; one with a gun - for “fire” - and another one with a boot - for “movement.” A third one, with numbers on them, can be used to lay ambushes or to foul the enemy, but are expendable, and once used are removed from the game. You can use whatever you want as Tactical Order markers, as long as they have two different signs - and numbers - on their front, and they look the same when they are turned over.



We will use these Tactical Orders during the game, assigning one of them to the elements we want to activate in each turn.

They are turned over, so the enemy can see that that element (or Mojon) already has a Tactical Order, although no one can see which order has been assigned.

“That’s the name of the game: Fire and maneuver.”

Band of Brothers: Carentan: 00:38:55 HBO (2001)

The Tactical Order is only exposed when the player activates the element, or if an enemy declares an attack against the said element. When this happens, the elements are placed physically on the game table (if they were in a Mojon).

The Tactical Orders only oblige the player to perform the first action of the element, carrying out what is shown on the Tactical Order. The remainder of the actions can be used as the player wishes.

When the player exposes an element’s Tactical Order, he must place that Tactical Order as close as possible to the target/element to be shot at (if it is a Fire Tactical Order) or to the location where the element is to move to (if it is a Movement Tactical Order). This does not mean that the element must reach that point, (because the player can change his mind if the enemy reacts) but all the figures engaged by the Tactical Order should head and move towards that point until something significant justifies a change in their orders.

If the Tactical Order is of the third type (“Numbered”) the elements assigned to it may remain hidden, but the Tactical order itself is removed from the game (in some scenarios the players may use a few of these markers).

10.1.1. Fire Tactical Orders

Elements with a Fire Tactical Order must use it to shoot or spot. If the unit is unable to do this, all the members of the element will lose their first action. When the Tactical Order is turned over, it must be placed close to the element/target the element wants to spot or shoot at.

Fire Tactical Orders look like handguns of the corresponding nations. To avoid mistakes, Ally Tactical Orders point to the right, and Axis Tactical Orders point to the left.



The unit will not shoot in the same action it reacted. If the player decides not to (or cannot) shoot or spot at all, the members of the element will lose their first action. Once they shoot against that target, they can do whatever the player decides.

10.1.2. Movement/Maneuver Tactical Orders

Elements with a Manoeuvre Tactical Order must use their first action to move at least 2". If the player decides not to (or cannot) move at all, the members of the element will lose their first action.

When the Tactical Order is turned over, it must be positioned close to the point the element wants to reach. All figures must try to reach that point, and can only change the order if they are shot at or detect an enemy unit.

Once they reach that point, they can do whatever the player decides.

Movement Tactical Orders look like boots from the corresponding nations. To avoid mistakes, Axis Tactical Orders point to the left, and Ally Tactical Orders point to the right.



10.1.3. Ambush/Deceit Tactical Orders

Every player will have very few Ambush/Deceit Tactical Orders (with numbers on them); usually as many as the Quality of the force commander.

When used as "Ambush", they work like a "Fire" Tactical Order but with an important advantage; the reaction takes place immediately, at the same moment it is turned over. So it can be used to ambush an enemy.

However, when used as "Deceit" they can also be used simply to mark an element as if it was ready to do something this turn, when in fact the player had no intention of doing anything with it.

In both cases, once used, the marker is removed from the game, this is why there are a limited number of them.



10.1.4. Elements with inherent Ambush Tactical Orders

Anti tank guns, tank destroyers, and some elements (specified by the scenario) have an inherent Ambush Tactical Order. The player does not need to place the Tactical Order on the table, he simply declares it when he wants, but there is only one per element, and it must be the very first action of that element in the game.

10.1.5. Tactical Orders and Mojons

An Undetected Mojon has an inherent Maneuver Tactical Order, but it has only one action, it can be used only to move, and the maximum distance depends on its type; up to 10" for infantry, up to 20" for armored vehicles, and up to 30" for soft skinned vehicles, boats, etc.

When a Mojon has more than one element assigned to it but the player wants to use Tactical Orders to operate with these elements separately, he must place the Tactical Orders on the elements printed in the OoB.

10.1.6. Tactical Orders created during the turn

A player may place a Tactical Order on a mojon or element even if the turn has already started if:

- it has been spotted by Provocation (only Tactical Orders of Movement or Fire)
- it opened fire on an enemy by mistake when checking “Fire Discipline” (only Tactical Orders of Movement or Fire)
- the enemy has approached - in inches - less than three times their own Quality (any Tactical Order, including Ambush)
- a Leader uses an action to assign a Tactical Order to an element during the game.

WEAPONS HIERARCHY	
Weapon	Tier
Melee weapon	0
Bow, crossbow, sling	1
Single shot firearm	2
Pistol, Revolver	3
Bolt action rifle	4
Semi-automatic rifle	5
Sub machinegun	6
Assault rifle	7
LMG	8
MMG, launcher	9
HMG, flamethrower	10

10.1.7. Tactical Orders assigned to leaders

When a player wants a squad’s fire team to - for example - cover the advance of another fire team acting simultaneously by using fire (that is, activating two [or more] elements simultaneously), a Tactical Order is also assigned to the leader of that squad (any Tactical Order as it simply serves to nominate the leader when establishing the initiative).

When the player shows that Tactical Order, he discards it and those elements associated with that leader are activated and then the first action of those elements is executed simultaneously.

Another typical example would be a Banzai charge ordered by a platoon leader to all his squads.

A Tactical Order assigned to a Leader, in the case of a Reaction, will not activate the subordinate elements. In that case, it will work as a standard Tactical Order assigned to the group where the Leader is.

10.1.8. Tactical Orders created by Poor Fire Discipline

When an element has no leader (or it can not receive orders from its leader) and sees an enemy element armed with weapons of a lower tier than themselves, it must pass a check against its Quality. If it fails, they will open fire spontaneously against the enemy element (although possibly ineffective given the Aggressiveness).

Even so, they may betray their position and be aware of it. This is why the player can assign them a Tactical Order, even though they have already used up some actions.

10.1.9. Considerations about the Tactical Orders

Most of the times, the Tactical Orders are assigned to entire squads, fire teams, support weapons, vehicles, boats or special groups like sniper or flame-thrower teams, or even the troops disembarking from a landing craft, as a whole.

However, in some cases, the course of the game may require the assignation of a Tactical Order to single figures like an officer, a combat medic, or to detach a scout (if the military doctrine of your forces allow you to do so) or simply a figure that becomes isolated and needs to return.

When a Tactical Order is assigned only to a Leader, it means that all the units controlled by him can be activated at the same time as the Leader. When this happens, it doesn’t matter which marker was assigned to the Leader, because the Leader will join the closest element. All the elements must be in sight or voice/whistle distance.

This case is very useful for Fire-and-Movement maneuvers because the MG team of the squad can deploy cover fire while the rifle team advances. The Leader must join any of both teams, at the player’s choice.

The basic rules, when it comes to establishing the number of Tactical Orders you are to use in one turn are:

- The number of Tactical Orders assigned to a squad should not exceed the Quality of the squad leader
- All the Tactical Orders must be used in that turn

- If several figures belonging to the same squad are going to move to the same spot, or are going to fire against the same target, all of them will use the same Tactical Order

The assignment of a Tactical Order to a group of figures in a turn means that all the figures included in the group will do the same with their first action.

Elements without a Tactical Order can not be activated by the player but can react to enemy actions. In this case we assume they have been assigned the “Maneuver”. This means that the best course of action is to assign Tactical Orders to all the elements that are in sight of the enemy or that could be threatened by the enemy during the turn.

If an element is out of sight and sound of its leader, the player can only assign it a “Fire Tactical Order”.

11. THE ENGAGEMENT PHASE

11.1. The Engagement Phase

The Engagement Phase is comprised of several turns.

Each Engagement Turn uses up one of the turns specified by the scenario.

Each Engagement Turn

At the start of each Engagement Turn, the players place Tactical Orders beside the elements they want to use that turn, faced down.

Each Engagement Turn is composed of Rounds.

A round starts when each side nominates one (and only one) faced down Tactical Order. And a die is rolled to know which side gets the Initiative.

For the Initiative checks of the Engagement Phase we use the element's Leaders Quality because now the focus is on the maneuver and fire of every element.

The player who wins the initiative chooses whether to activate his Tactical Order or whether to order the enemy to activate their Tactical Order. The Round starts now.

Each Round

The element whose Tactical Order is activated becomes active and its Tactical Order is exposed.

In the case of a Tactical Order assigned to a Leader, the Tactical Orders of all the subordinated elements are exposed.

In the case of a Movement Tactical Order, it is placed where the player intends to go with that element.

In the case of a Fire Tactical Order, or Ambush Tactical Order, it is placed close to the enemy element chosen as the target.

The player places, beside the element, a small die showing a "one". This is to keep track of the actions (or impulses, in the case of guns or vehicles) used up.

Remember that the no active player can react to many actions, so it is perfectly possible that as soon as an active player declares the action he wants to execute, the enemy declares in turn that he wants to react against that action (this forces the reacting element to turn over its own Tactical Order and to pay for the reaction). Every time an action is declared by an element, its "action spent die" must be updated.

Any enemy element may react, as long as it has enough unspent "Actions" to do it (normally two, one to pay for the Reaction and another one to act).

When there is more than one active element in play, each side chooses one of those elements (only one per side) and a die is rolled, applying the element's Leaders Quality as the modifier. Then, the player who wins the initiative chooses whether to execute his action with the element he chose or if he orders the enemy to execute theirs.

That action is then executed.

The action may trigger the reactions of other enemy elements, or the reaction of an enemy element triggers a reaction of friendly forces. The main question here is that as long as there are active elements with turned over Tactical Orders, this cycle can continue.

However, this does not mean that elements engaged in combat must spend all their actions in that firefight. At any moment, a player may decide to stop using up actions, but from then on, it will only be able to react, it can not be nominated to be active again because no longer has a faced down Tactical Order.

End of the Round

The Round ends when none of the players want to keep spending actions in this Round, or all the actions of the elements engaged in that Round have been used up.

Now all the Tactical Orders of all the elements engaged in the Round are removed from the game table.

End of each Engagement Turn

An Engagement Turn ends when all the Tactical Orders placed by the players - or the ones created during the turn - have been turned over and executed.

Check for changes in fires, smoke and dust clouds.

Check for changes in the status of wounded and aggressiveness.

Check for Reinforcements and Special Events (if any)

Check for Victory Conditions of the Scenario.

Stunned figures return to the fight.

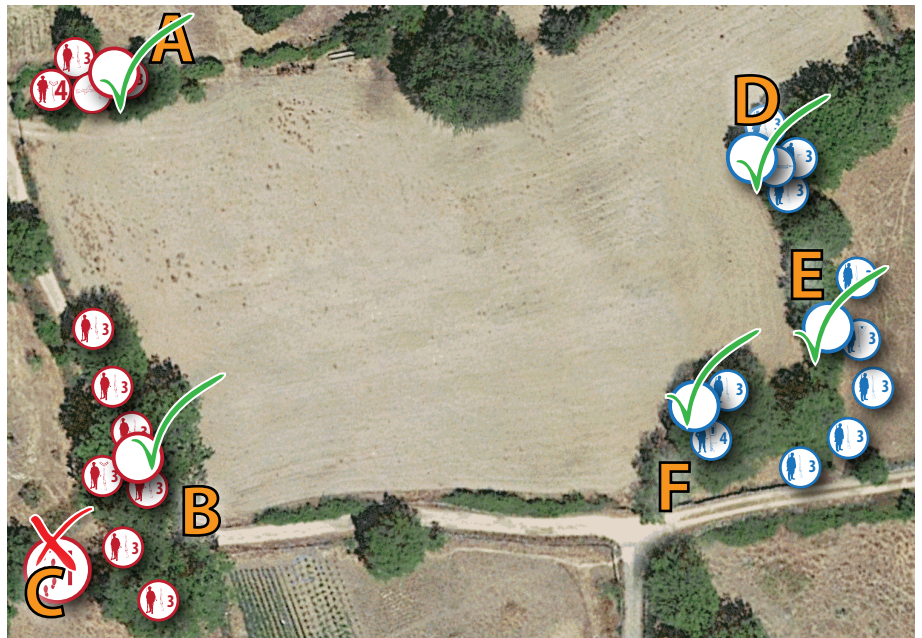
End of the Engagement Phase

The Engagement Phase ends when one of the players meets the Victory Conditions, both players agree to finish the game, or they use up the number of turns specified by the scenario.

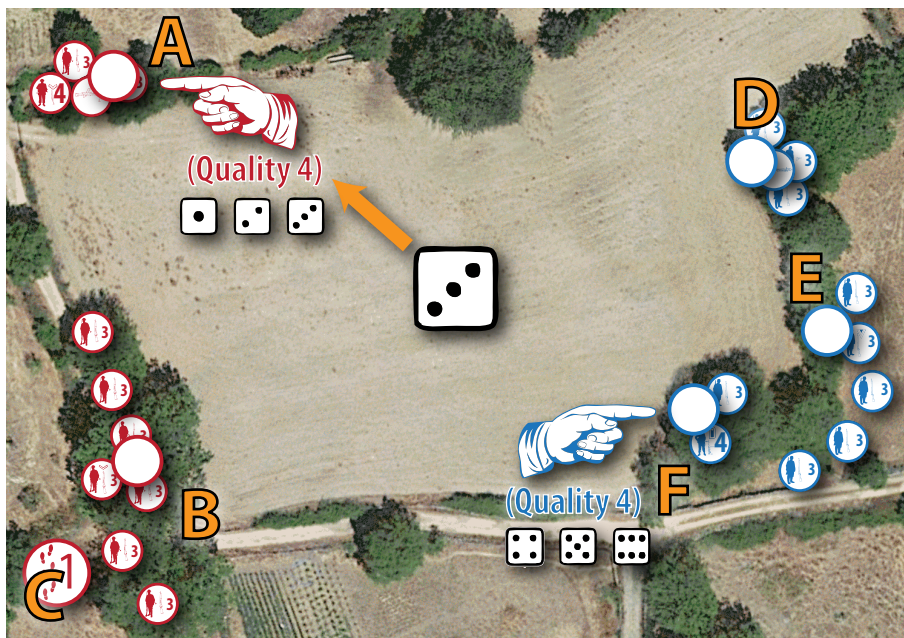
11.2. Example of Round.

In this example we have a Red squad deployed in two fire teams (A and B), a Red element undetected still in a Mojon (C) and a Blue Squad divided into three groups, the MG (D), the Leader and a private (E) and the remainder of the squad behind a hedge (F).

The players can nominate any of these deployed elements because all of them have a Tactical Order unturned. The Mojon can not be nominated because its controlling player didn't place a Tactical Order besides it.



Each side nominates one unturned Tactical Order, and the Initiative die is modified by the difference between the elements Leader Quality.



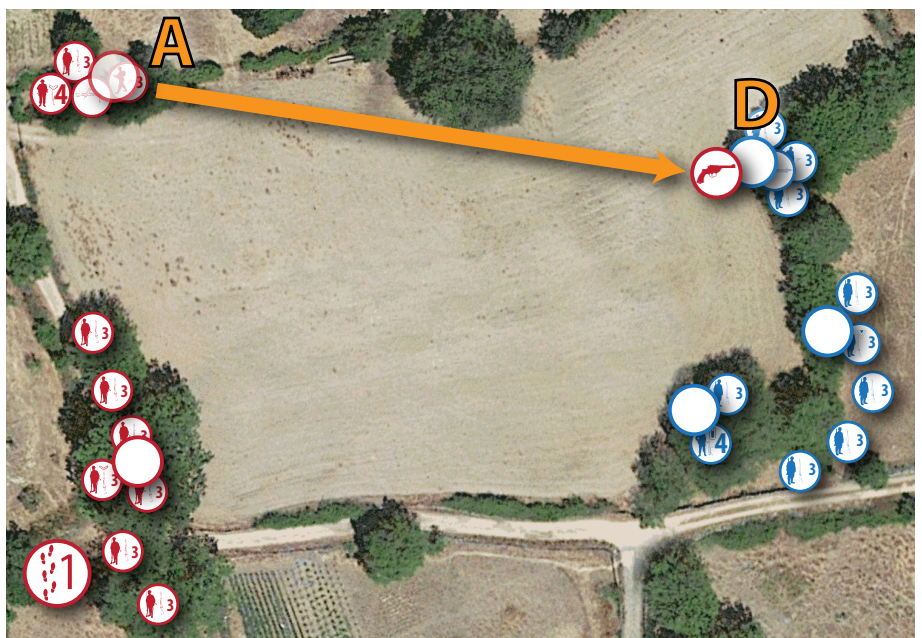
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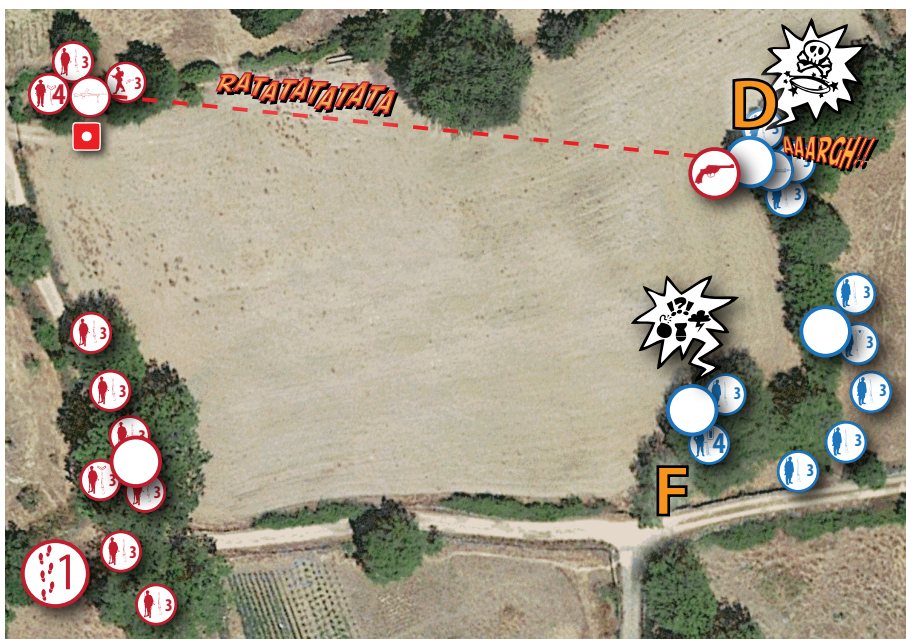
In this case, both sides have Leaders with a Quality of four, so the die roll is not modified.

The Red side will win the Initiative with a result between one and three, and the Blue one with a result between four and six.

The die roll shows a three, and thus the Red side wins the Initiative and decides to play its Tactical Order. The Red player turns up the Fire Tactical Order of the element A and places it close to the target he wants to shoot.

This Round will finish when the element A uses all its actions or decides to stop playing.





The Red machinegun opens fire, killing only the Blue machine gunner and enabling the enemy units to react due to the fire.

The Red player puts one "Used Up Actions Die" showing a one beside the element he used.

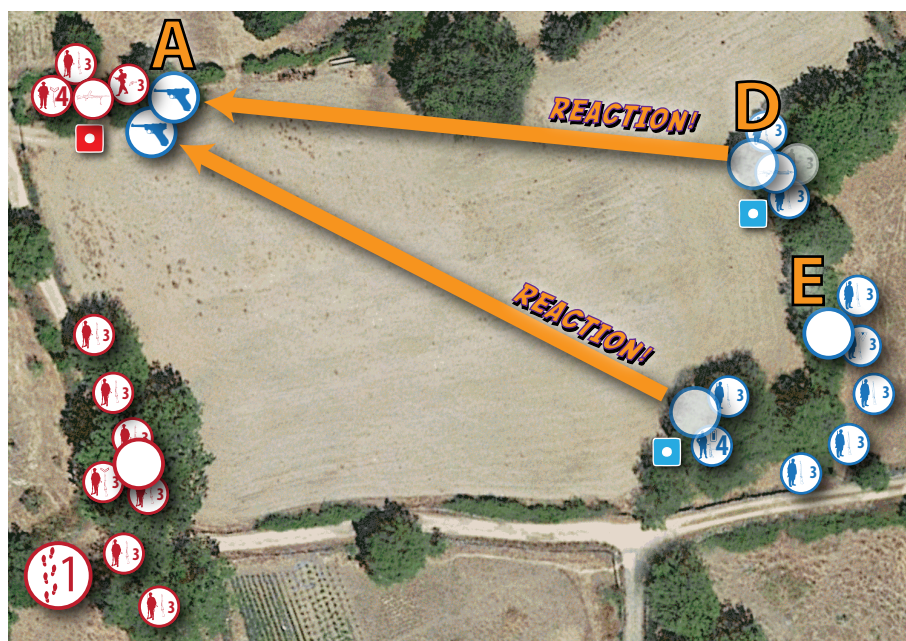
It must be noted that only some actions can trigger an enemy reaction and that the reaction is triggered after the action is executed

In this case, only the element that received fire (D) and the Leader element (F) decide to react.

As a player, uses the reaction only as a last resort measure because it uses up one action just to declare the reaction itself.

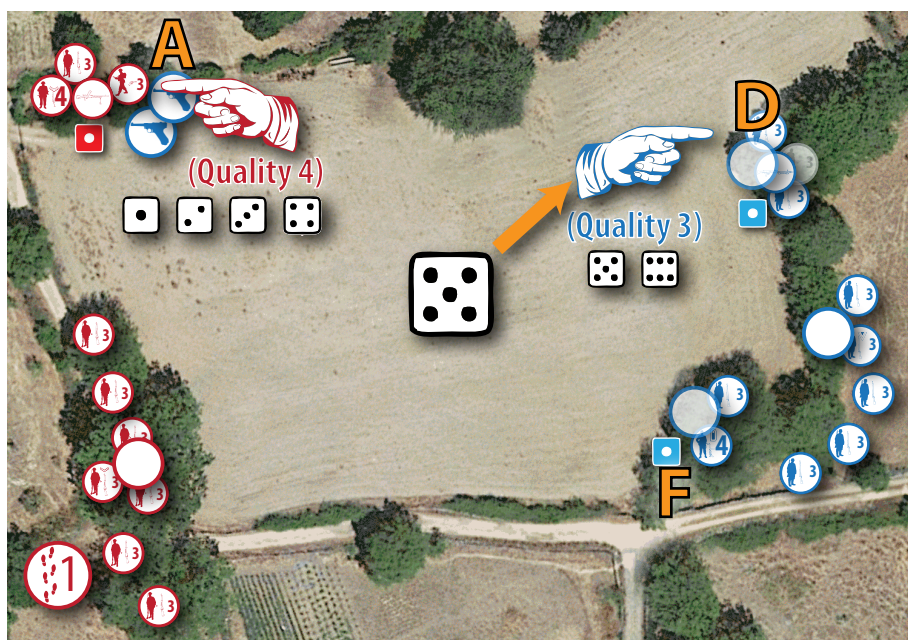
Once the first action is executed, the turned over Fire Tactical Order (and only in the case of Fire Tactical Orders) can be removed from the game table, but sometimes it helps to know whether it is facing an element.

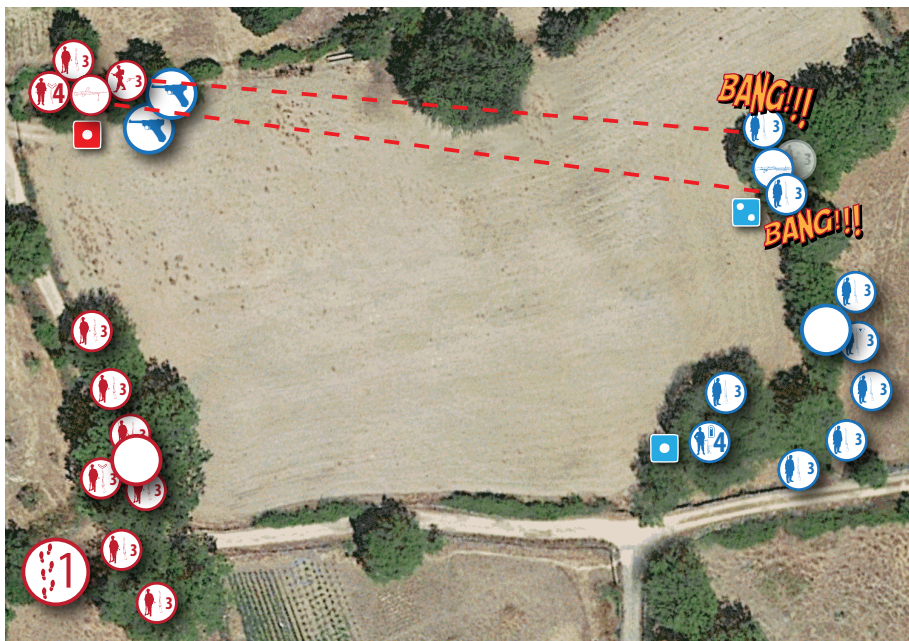
Both elements, D and E declare reaction, showing their Tactical Orders and place them close to the element that triggered the reaction. As they declared reaction, both must put one "Used Up Actions Die" showing a one besides the reacting elements.



Now there are three active elements, one Red (A) and two Blue (D and F). And players can nominate only active elements.

The Red player - obviously - chooses the A, and the Blue player chooses D. As the Quality of the Red element (due to the presence of the Leader) is greater than the Blue (by one), this time the Red side will win the Initiative with a result between one and four, and the Blue one with a result of five or six. The die roll shows a five, so the Blue player gets the Initiative, He decides to play.





Without a machine gunner and with a Fire Tactical Order, the Blue player opens fire with the Mausers against the Red machine gun team, without any effect. Anyway, the “Used Up Actions Die” is updated showing now a two.

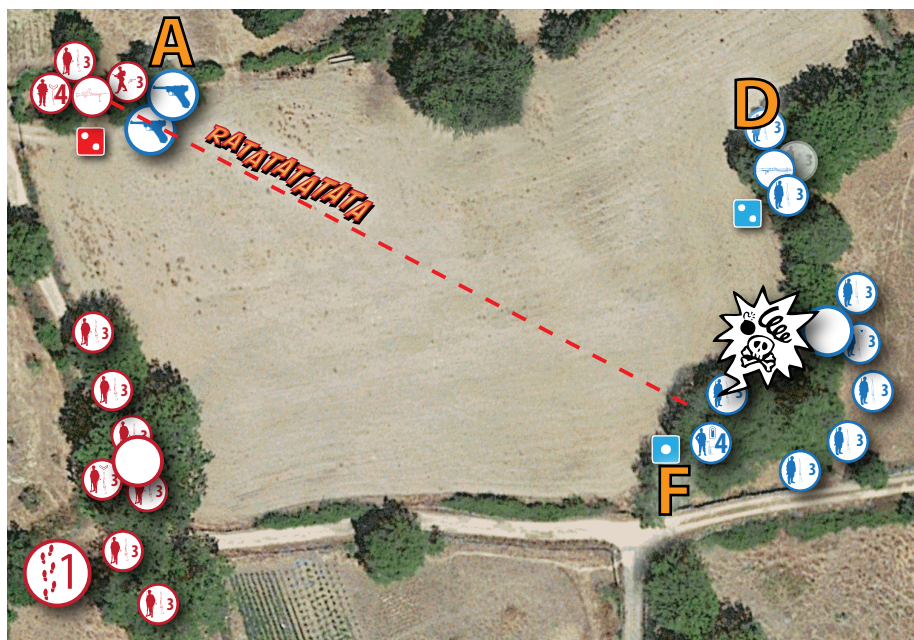
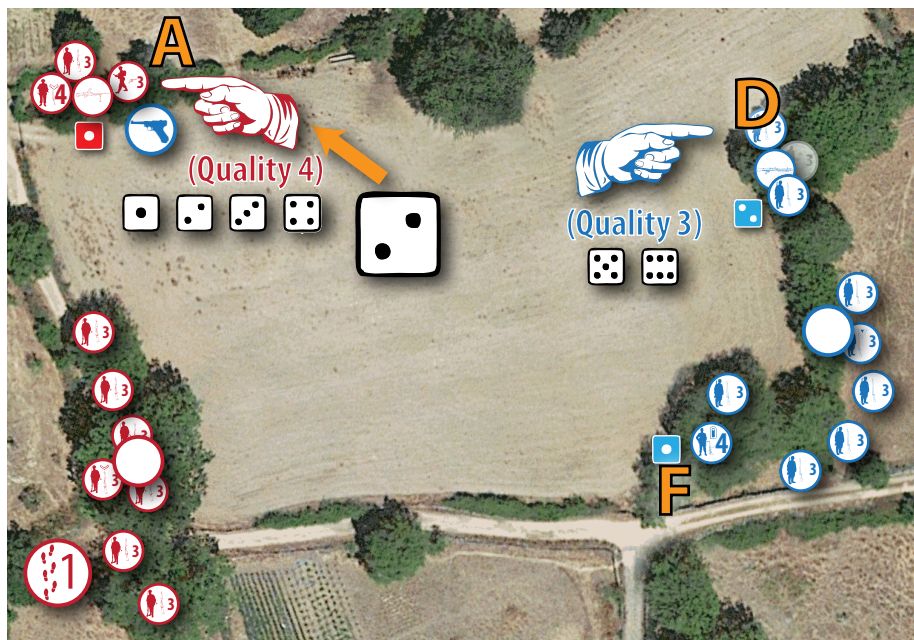
As you can see, only the active element (the one which started the Round) and the elements that reacted can be nominated. If the Red player wants to commit more elements to the fight (it looks like this is not the case) he can do it, simply reacting to an action executed by the Blue elements.

Again, the Red player can only nominate the element A, and the Blue player again chooses D. As in the previous step, the Red side will win the Initiative with a result between one and four, and the Blue one with a result of five or six.

However, this time the luck gives the Initiative to the Red player, and he decides to use it.

The Red machine gun pours fire into the blue Leader element, killing the private. The “Used Up Actions Die” is updated showing now a two.

As you can see, now the Red Bren is firing against a different target, but it could move to a different position (if he wants to) because the only action that must be done according to the Tactical Order is the first one. In this way, a Movement Tactical Order commits the element to move only the first time it spends an action; the subsequent actions can be used in the way the player feels they suit his plans.





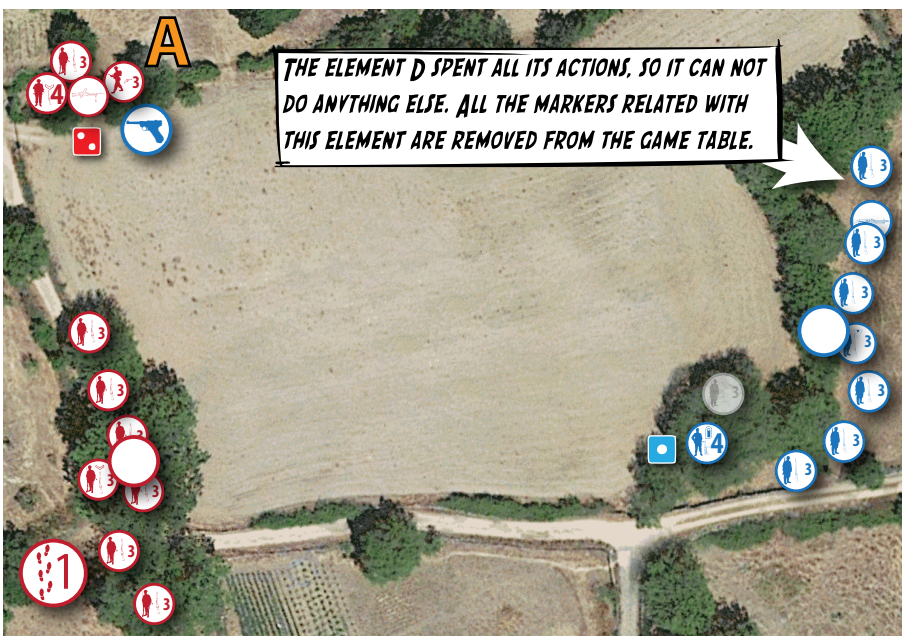
Again, the Red player nominates the element A, and the Blue player again chooses D. The Red side will win the Initiative with a result between one and four, and the Blue one with a result of five or six, so the Blue player finally can try to escape using the Initiative.

In normal circumstances, when a machine gunner is killed, it takes one action for the assistant to change position with the dead machine gunner; but this element is about to spend its last action, so the best solution would be to retreat to a safe position.



D element, now comprising only the MG assistant carrying the MG and a private retreat behind the hedge using their last action.

This is a special case. As you can see, the MG assistant did not need to use any extra action to take the MG. In other circumstances, if the MG is mounted on a tripod, this could require some actions to dismount it. Later, if the MG assistant returns to combat, he can man the MG without paying any extra action do to so. Its only penalty will be that as he is not the machine gunner, he will have no benefits when changing the barrel or fixing jams.



Without unspent actions, this element finished its job this turn. Only if an enemy element fires upon it, it could Hunker Down. To clean the game table, the Blue player removes the element's "Used Up Actions Die".

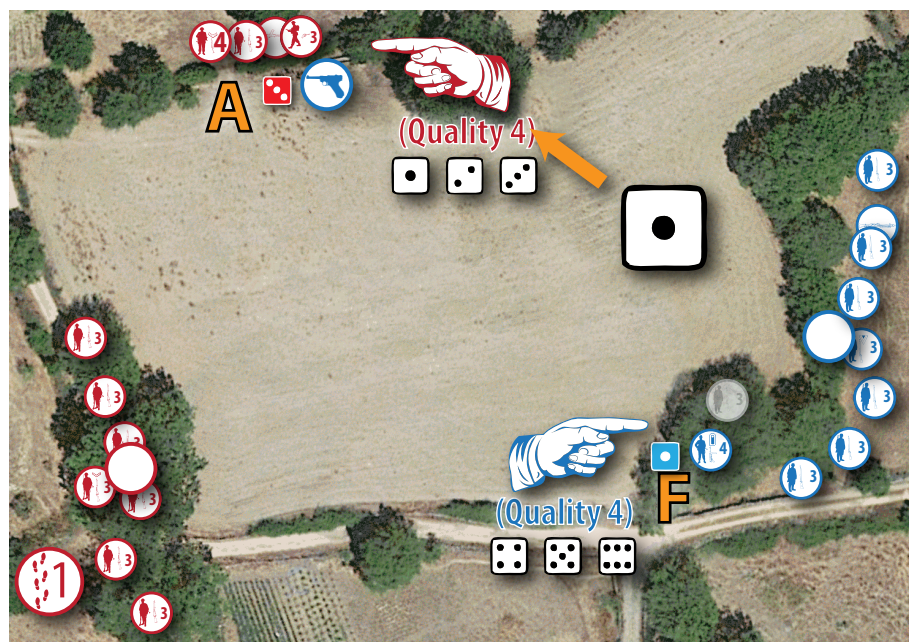
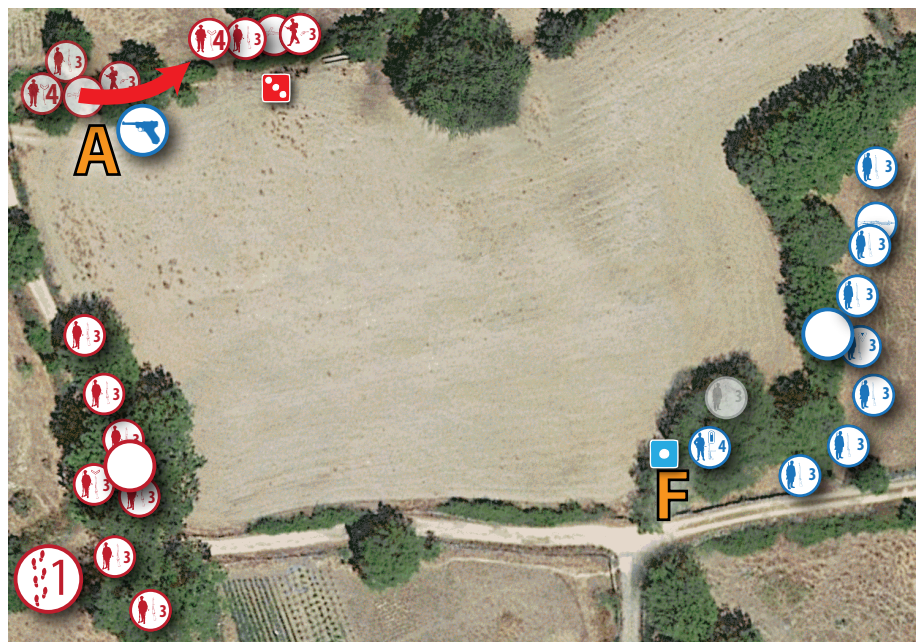
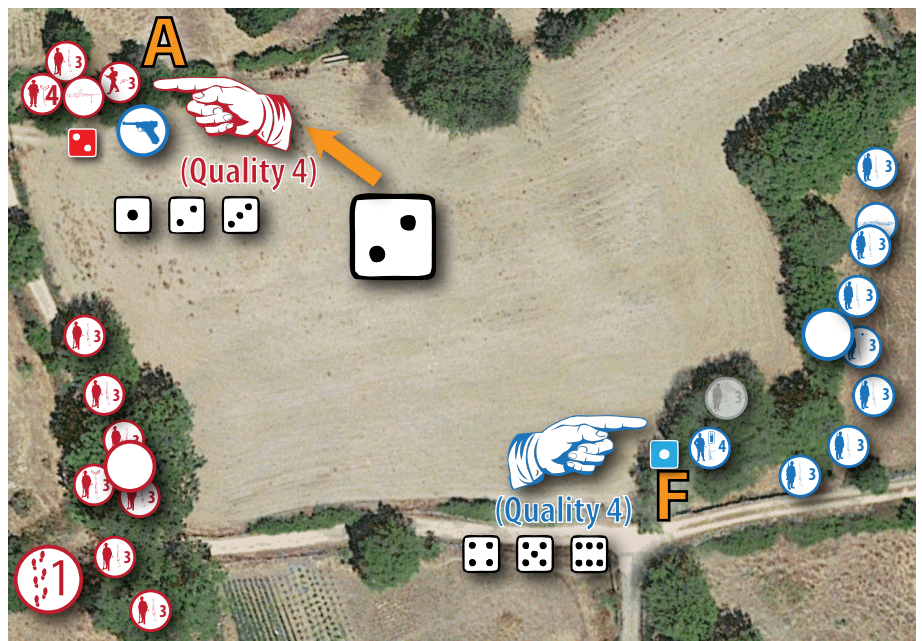
Now, only two elements remain active this round. The Blue one is still committed to spend its first action performing an aggressive action (marked with an "F" in the Type column at "LIST OF ACTIONS" on page 26)

The Red player nominates the element A, and the Blue player chooses F. Both elements have the same Quality so that the Red side will win the Initiative with a result between one and three, and the Blue one with a result between four and six. A two gives the Initiative to the Red player, and he decides to use it.

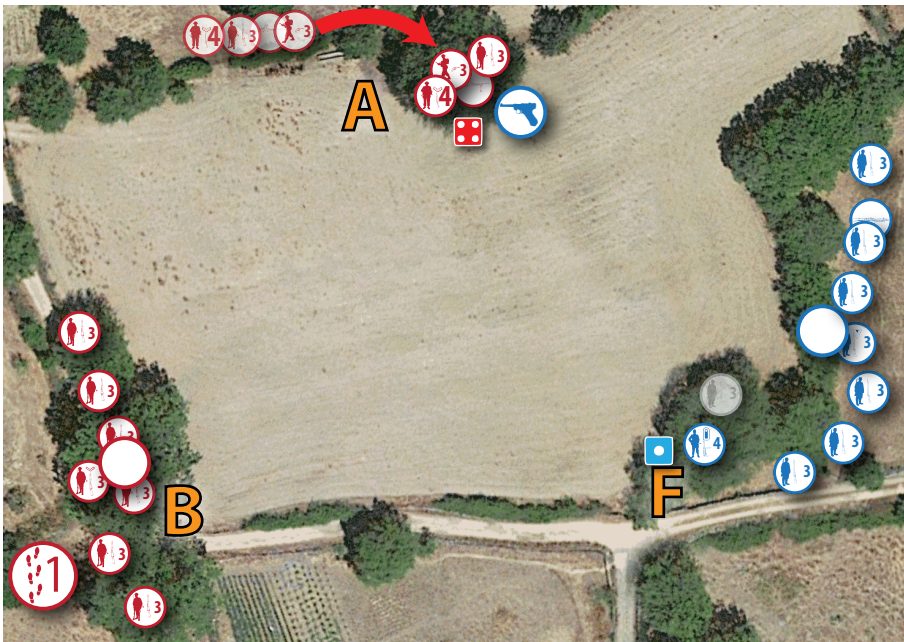
It probably sounds silly to use the Initiative to force the enemy to activate its element. But this could be a wonderful tool when the enemy is protected by cover, and you can not do anything until the enemy figures pop up.

The Red player slips his men behind the hedge so the Blue Leader at F can not fire at them. Being out of sight, the player chooses to run. The “Used Up Actions Die” is updated showing now a three.

Please note that the Blue Tactical Order travels with the Red element. This means that the Blue element is still committed to using the first action of the element to shoot against that Red force. This is not mandatory, but it is a good practice.



And again both players nominate their active elements, and again the Red player gets the Initiative and decides to use it.



The Red completes the deployment of the element A to its new position, ready to provide fire support to the rest of the squad, (B).

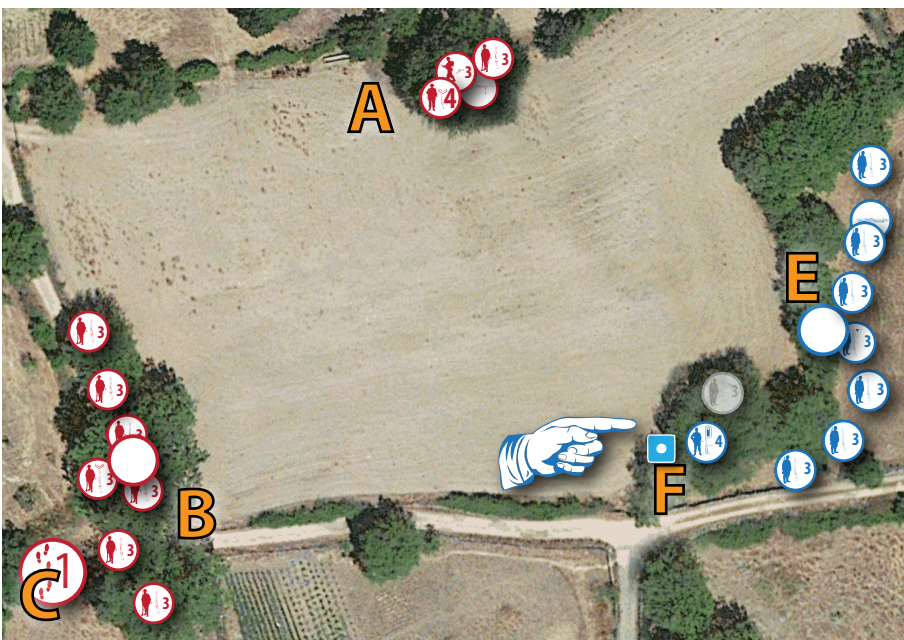
However, the fireteam spent its last action doing it, so this element finished its job this turn. Only if an enemy element fires upon it, it could Hunker Down. To clean the game table, the Red player removes the element's "Used Up Actions Die".

There is only one active element left on the game table; the Blue Leader element. And it only used up one action. The Blue player declares that he does not want to activate it and, as there are no other active elements, the Round is finished.

The next Round starts with only two nominable elements, the Red Squad (B) and the Blue one (E).

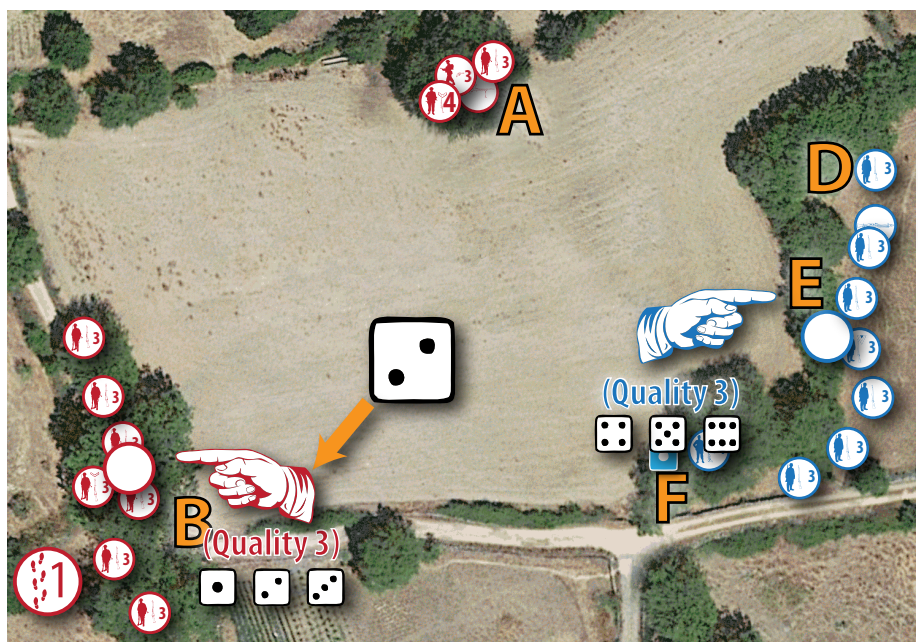
The Red element A and the Blue D can not be nominated because they already used all their actions up.

The Red Mojon 1 has no Tactical Order assigned, so it can't be nominated, and the Blue element F lost its Tactical Order and now can only rejoin the fight due to a reaction.



So the Red player nominates the element B and the Blue one the unit E. As both have the same Quality, so the Red side will win the Initiative with a result between one and three, and the Blue one with a result between four and six. A two gives the Initiative to the Red player, and he uses it.

The Blue squad E is still behind the hedge, and the Blue Leader is not a significant threat.

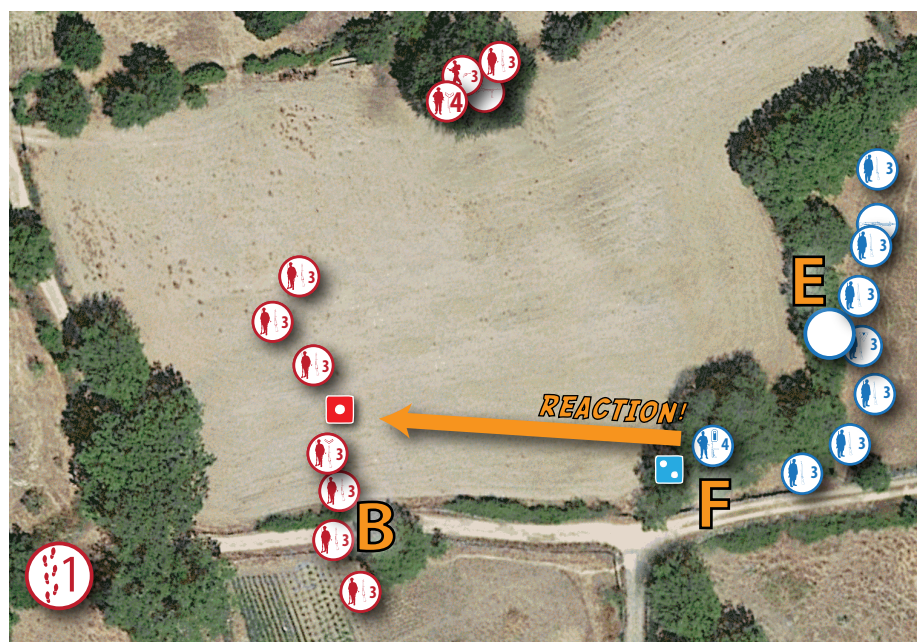
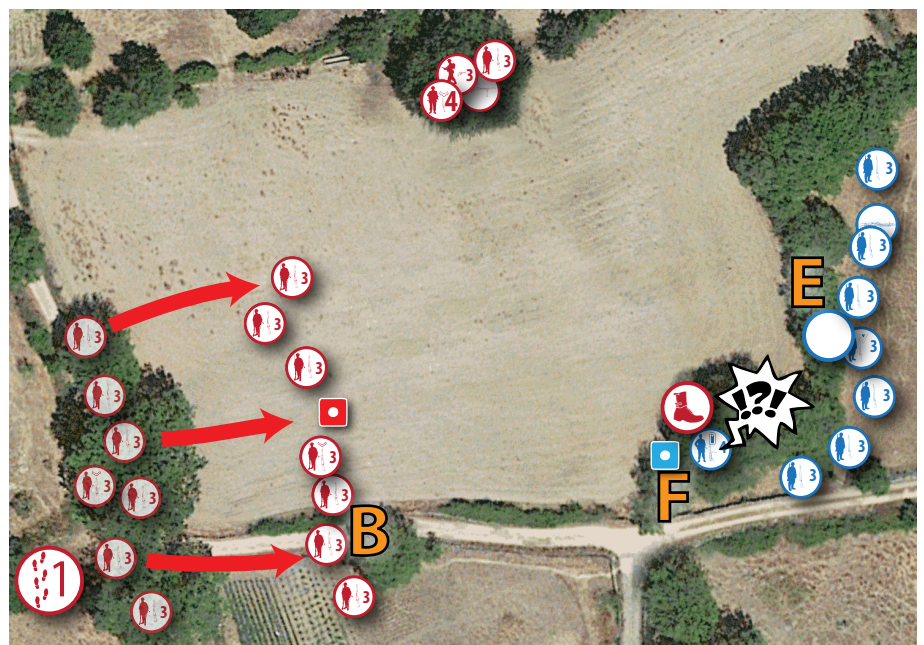
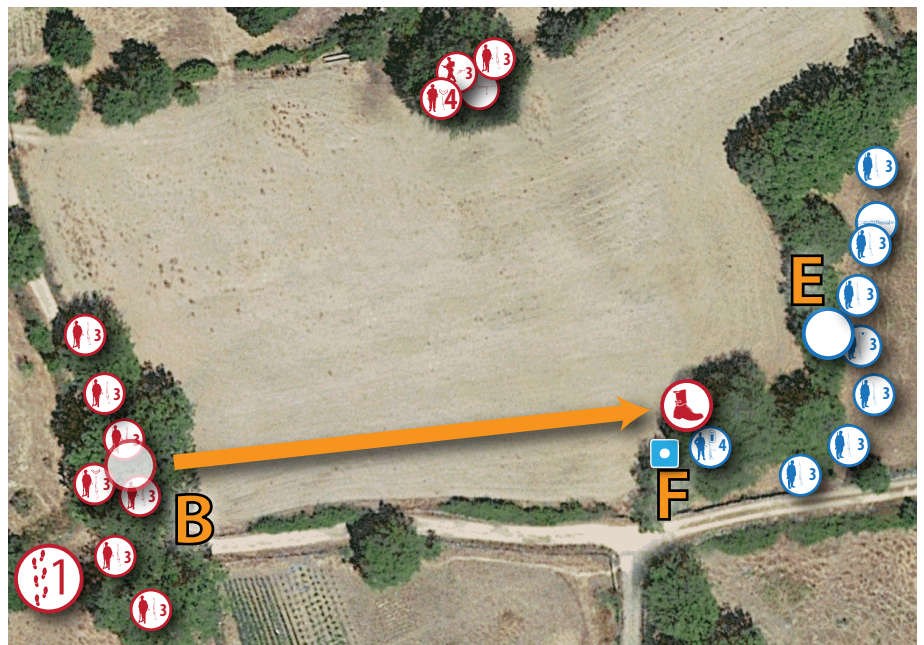


So, the Red fire team will advance to get as close enough to the enemy to throw some hand grenades on them.

The Red player places the Movement Tactical Order in the point where he want the element to finish the movement and places an "Used Up Actions Die" showing a one besides the element.

This is a desperate situation for the Blue player. The Blue Leader is alone and his only chance to survive is to call the Blue element E into action. But to do that, the Blue Leader must react to the Red advance, using up another action.

This element already paid to react the previous round, but the reaction only allows an element to take part in a Round, and only in that Round, so now the Blue Leader needs to pay again to react in this new Round.



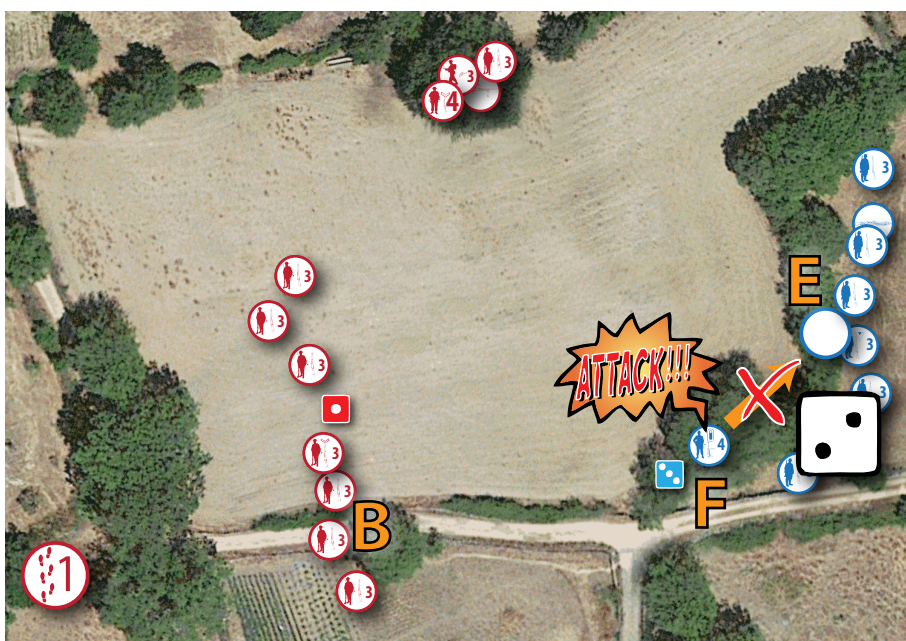


Now the Red player nominates the element B and the Blue the Leader F, which has a Quality of four.

For this reason the Red side will win the Initiative with a result of one or two, and the Blue one with a result between three and six. The Blue side wins the Initiative and uses it to try to commit the Blue element E into the fight, using the whistle (see “7.4.18. Using the whistle” on page 29).

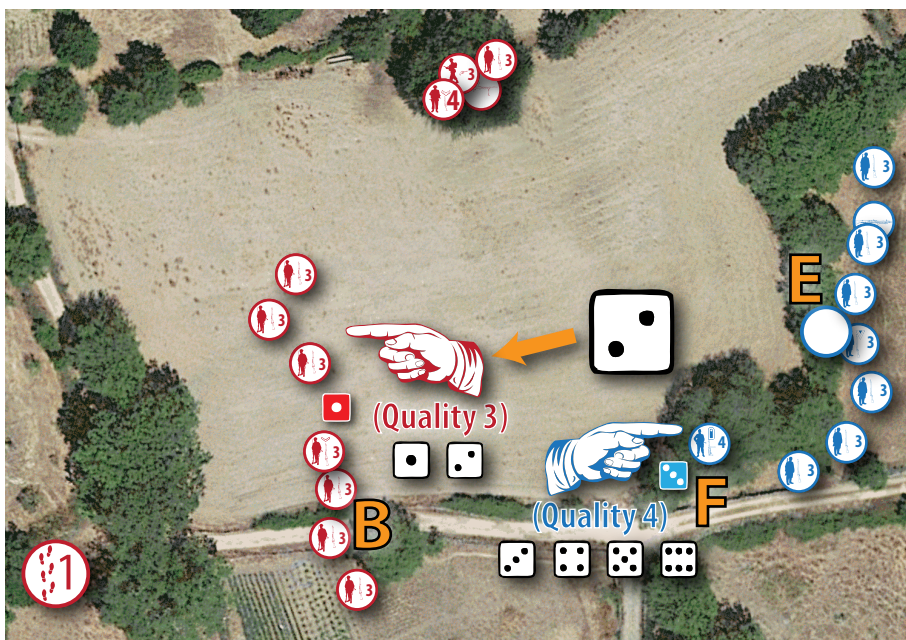
But this action requires a Quality Check in each element that receives the signal to obey the order.

The Quality Check of E is three, but the player rolls a two, so the element E will not respond to the call.



Again the Red player nominates the element B and the Blue the Leader F, which has a Quality of four. For this reason, the Red side will win the Initiative as a result of one or two, and the Blue one with a result between three and six. A die roll of two gives the Initiative to the Red Player, that decides to keep advancing with some men and to shot against the Blue Leader with the remainder.

In these cases, the moving figures are the first to be moved on the table.



Remember, only the first action must be of the type enforced by the Tactical Order. All the following can be of any type.

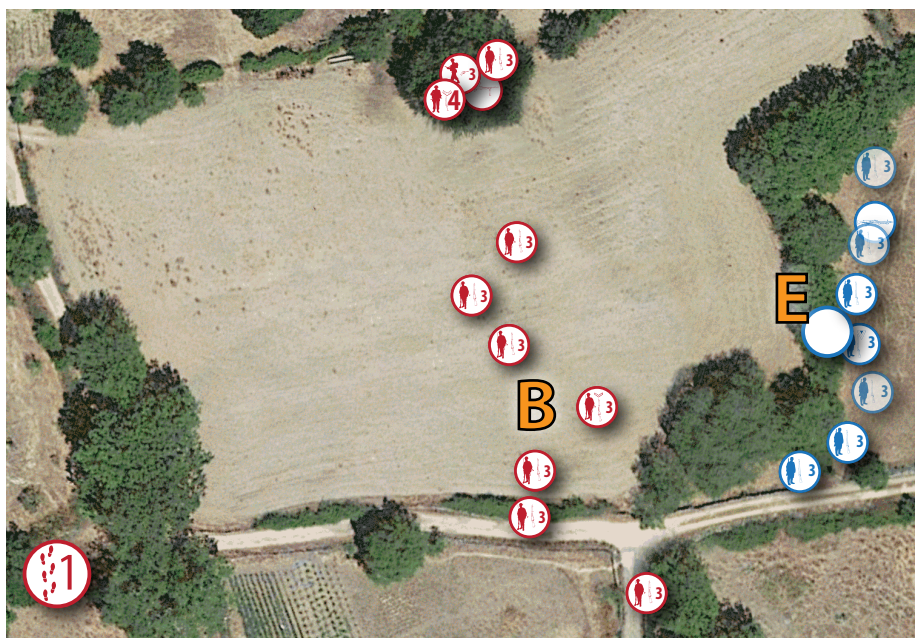
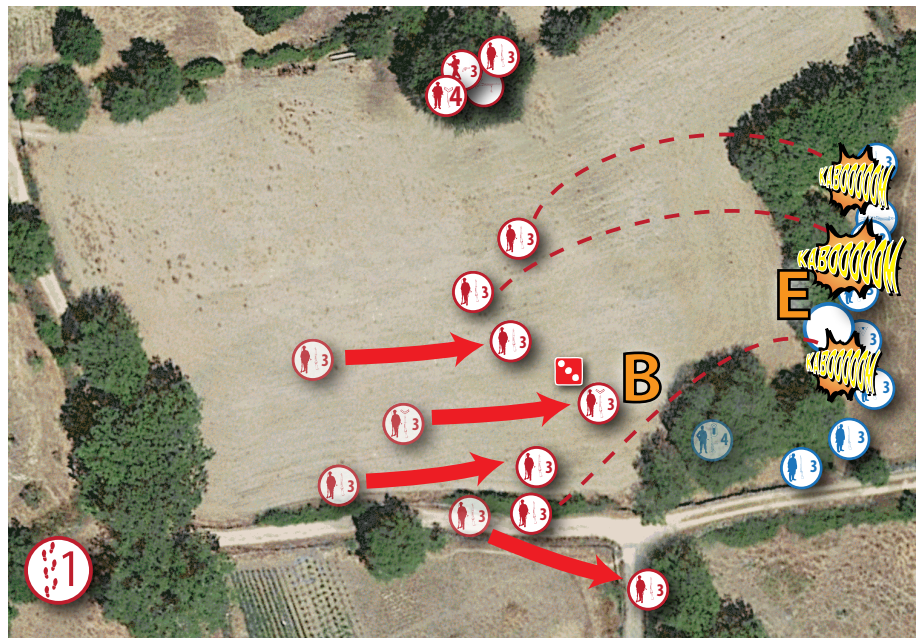
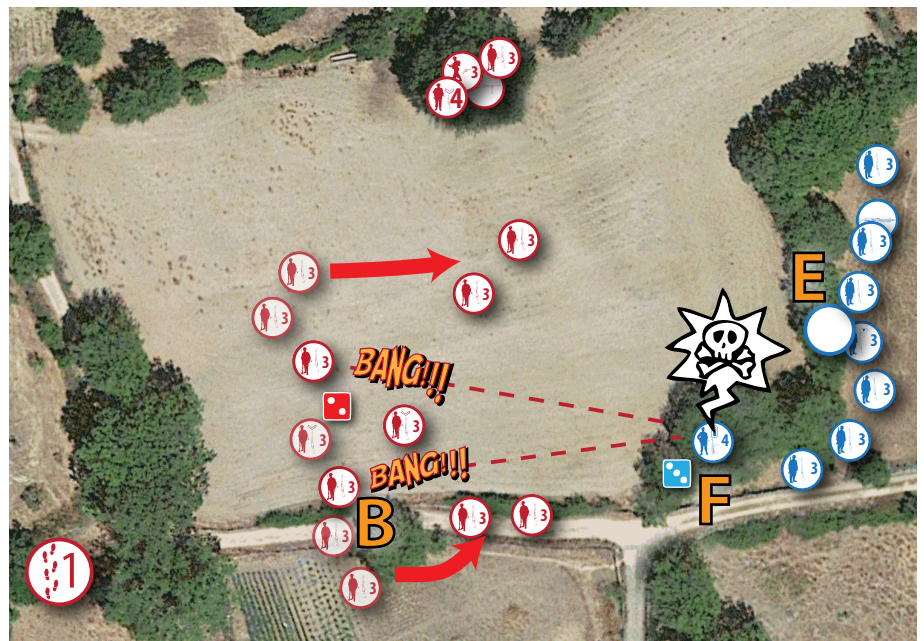
The Red Fire team uses its second second action advancing while the shots from two of the men kill the Blue Leader. The "Used Up Actions Die" shows a two.

But the death of the Blue Leader means that now there are no Blue elements active, so the Red player can execute his last action without the need to nominate and get the Initiative.

The Red player uses this last action to bring to the line the men left behind before while the rest of the men throw hand grenades against the Blue forces.

After this last action its time to clean the game table. All the markers related to elements that used up all their actions are removed, along with the dead.

But the turn is not finished. There is still an unturned Tactical Order (element E). Probably the Blue player should withdraw the remainder of the element.





THE FIGHT ON FOOT

Troops
Aggressiveness
Awareness
Combat
Casualties
Close Quarter Combat
Fighting in Built Up Areas
Special Rules

IN THIS CHAPTERS YO WILL LEARN HOW TO READ AND
USE THE **ORDER OF BATTLE (OoB)**, THE CONCEPTS
AND MECHANICHS THAT RULE THE HUMAN SIDE OF THE
COMBAT, AND THE SPECIAL RULES.

QUALITY	
	Value
Prisoner, Penal Unit, Civilian	1
Militia	2
Regular unit	3
Regular unit, veteran	4
Elite	5
Specialists (1)	+1
NCOs	+1
Officers	+2

(1) In the case of specialists, the Quality increase is only applicable when performing duties related with the speciality, like fixing a weapon jam, for gunners, extinguishing a fire for sailors, or setting up booby traps for combat engineers.

NCOs always have the same Quality value as their men, plus one. Officers always have the same Quality value as their men, plus two.

The Quality value determines how many actions a figure can perform in a turn. It is also used when the figure must do something special like fixing a jam in a weapon; in these situations, roll a die, and if the result is equal or less than the Quality value, it means success. This is why the specialist figures have an increased Quality that only applies to such situations, not to the number of actions they can do in a turn.

12.1.1. When a leader is leading an element:

- The leader can't use his personal weapon (exception, they can use their weapons while leading if they are executing an Ambush or a Close Combat) .
- The element benefits from the Leader's Quality.
- The element doesn't need to check for Aggressiveness, nor they have any restriction to move closer to the enemy.

12.1.2. When a leader is in sight of an element:

Troops are considered "under command" when:

- they are in sight of their leader
- they are waiting for a signal to perform the next order.

12.1.3. Troops Out of Command

Troops are considered "out of command" when none of the previous conditions are met.

Troops out of command will need to check for Aggressiveness before opening fire, and will not be able to get closer to the enemy.



13. AGGRESSIVENESS AND MORALE CHECKS

13.1. Aggressiveness (Recommended)

Despite the image shown in the movies, most soldiers are loath to kill. When the time comes, it is not too easy to pull the trigger, and many factors affect the disposition of a soldier to do so or not.

This is when “Aggressiveness” enters the scene. This value shows the disposition to use his personal weapon against another man with the aim to kill him, by his own free will.

So, every time a soldier has to fire against another human being, without a clear order from his leader to do so, he must pass an Aggressiveness check.

Usually, the basic Aggressiveness value for soldiers fighting in the Second World War is two, but in many scenarios, it will be different; and of course, it may change during combat.

Some situations will increase the aggressiveness of some figures, and others will work oppositely.

For example, in May 1945, it was not the same for a German unit to fight against the American forces than to fight against the Red Army. And an American GI will feel much more predisposed to shoot against an SS than to kill an old man with the armband of the Volkssturm.

This means that in many scenarios you will find that your troops are much more inclined to shoot against some enemy figures than others.

And sometimes, the death of one figure will change the aggressiveness of their comrades.

All these details will be explained in every scenario. If you are designing your own, use common sense, but try to keep the Aggressiveness values as low as possible or your fight will become a massacre.

13.1.1. How Aggressiveness works

Aggressiveness doesn't affect:

- officers and NCOs leading groups
- soldiers controlled by a leader
- soldiers fighting against bunkers, tanks and other vehicles
- snipers
- vehicle or weapon crews (as long as they fight as such)



As stated above, for an average soldier, the normal value is two, and this means that every time the player wants to shoot the enemy with an isolated private (or group of privates), he must roll a die. If the result is less than the Aggressiveness, the private fires normally and the target must roll for damage; with a result equal to the Aggressiveness, the soldiers fire his weapon, but without the aim to kill, so the shot is lost. And with a result bigger than the Aggressiveness, the soldier will not use the weapon at all. Some circumstances may change the figure or groups of figures value:

CHANGES IN AGGRESSIVENESS	
Situation	Change
Death of a comrade, roll a D6;	
- with one or two	-1
- with three or four	-
- with five or six	+1
Being witness of an atrocity committed by the enemy against civilians	+1
Being witness of an atrocity committed by the enemy against comrades	+2
Being witness of an atrocity committed by the enemy against women, children, elders	+3
If the victims or the atrocity are defenceless, an additional	+2

However other circumstances will affect the result of the die roll when the Aggressiveness is checked:

MODIFIERS TO AGRRESSIVENESS	
Circumstance	Modifier
Using a knife/bayonet	-1
The enemy is not aware of the presence of the shooter or is already engaged in combat with another unit	+1
The target is an officer, NCO, gunner, crew or sniper	+1
The enemy is less than 2" away	-3
The enemy is less than 5" away	-2
The enemy is less than 10" away	-1
The target is more than 30" away	+1
The target is defenseless	+1

13.1.2. When the Aggressiveness drops below one...

They lose the capability to fight and they will even be unable to return fire.

If there is a leader with the privates, they will keep fighting normally.

If there are no NCOs or officers, the broken unit will try to contact the closer friendly unit.

If there is no friendly unit on sight, they will come back to the "Mojon" where it was deployed.

This situation is not reversible but as soon as the broken unit joins a friendly one, it can be pressed into service with it.

When a unit is reduced to only one man, his "Aggressiveness" value drops to zero; and he will try to reach the closer shelter and will do nothing for the rest of the game. He can't even defend himself, or run away.

13.1.3. Surrendering to the enemy

If enemy troops get close enough to threaten figures with their Aggressiveness below one (this means that they can't escape without being killed in the process), the figures must surrender to the enemy and become Prisoners (more on this later).

13.1.4. When the Aggressiveness reaches seven... (Optional)

Most of the times this happens after witnessing some kind of atrocity, from the effects of combat, or the influence of a fanatical leader. The player will lose control of them, and the unit will charge against - in the case of an atrocity - the enemies that committed the atrocity to take revenge, ignoring any changes in aggressiveness until they reach the enemy position and kill the criminals. At this moment, their Aggressiveness is restored to the original value of the unit.

If there was no atrocity, the unit will assault the nearest enemy unit.

13.2. Aggressiveness Check at the end of each turn

At the end of the turn, every element that changed its aggressiveness two or more levels, must pass the Aggressiveness Check. The formula is:

Initial size of the element - Actual size of the element - Aggressiveness + Die Roll

The initial size of the element, is the number of men assigned to the element when the tactical order was issued.

The actual size of the element is the number of able-bodied men (discarding killed and wounded).

For example, an element composed by a NCO and four men, changed its Aggressiveness from 3 to 1, so its eligible to pass the Aggressiveness at the end of the turn. In combat it loses two men (one killed, one wounded), so the actual size of the element is now three. The player rolls a die and the result is four.

The initial size of the element was five; the actual size of the element is three, the current Aggressiveness is four and the die roll gave us a three so:

$$5 - 3 - 1 + 4 = 5$$

The result is "Hesitation (1 action less next turn)".

AGGRESSIVENESS CHECK AT THE END OF THE TURN	
Value	Result
15	Unit Surrenders (to the closest enemy unit)
14	-
13	Unit Breaks (no more Tactical Orders)
12	-
11	Unit Shattered (minus 2 actions next turn)
10	-
9	Tactical Retreat (unit must move to the closest friendly unit)
8	-
7	Hunkered Down
6	-
5	Hesitation (minus 1 action next turn)
4	-
3	Firefight (the unit must engage the same or the closest enemy)
2	-
1	Combat Boost (-1 in all combat die rolls next turn)
0	-
-1	Morale Boost (one more action next turn)
-2	-
-3	Heroic Boost (two more actions next turn)
-4	-
-5	Nearly uncontrollable, trance-like fury (two more actions and -1 in all combat die rolls next turn)

13.3. The role of the leaders in the Aggressiveness

As long as a leader is controlling his men, they will do whatever they are ordered to do. But sometimes, a leader must increase or decrease the Aggressiveness of his men to help them perform their duty or avoid atrocities.

This adjustment only allows the player to increase or decrease the Aggressiveness of the troops in the amount given in the following table:

ADJUSTMENT OF AGGRESSIVENESS	
	Value
NCO	±1
Officer	±2
Company Commander	±3

But some special characters (Political officers or fanatical leaders) can adjust the Aggressiveness of other figures accumulatively, once per turn, so they can force (at least in theory) their men to commit atrocities or to surrender.

13.3.1. Notes about the Aggressiveness values

The basic value for Aggressiveness is two. But this value may change in some situations. As a general rule, when an army fights inside the borders of its own country, this value should be increased by one.

If the army is defending a city inside the borders of its own country, the value should be increased by two.

Militia forces raised hastily may have these values increased or reduced by the same amount, depending on a die roll (with a die roll of 1-3, the value is increased, with a die roll of 4-6, the value is reduced). This check is done when the unit is deployed in the table.

Be careful, because this means that a Militia unit can be deployed with an Aggressiveness of zero, so it will surrender to the first enemy unit it sees.

13.4. Morale check procedure (Optional)

In some cases, some situations depend on both factors, Quality and Aggressiveness; when this happens, we simply add both values to get the Morale value.

Morale value = Quality + Aggressiveness

We then use this value to perform the corresponding Morale Checks whenever we have one of the following cases.

13.4.1. Case #1, Crossing the Danger Zone

When a figure must cross a space that received enemy fire (i.e. when a man crosses a street, attracting fire), he must pass the Morale check.

The Morale check is passed if the die roll is equal or less than the figure's Morale value. To fail this test only means that that action is lost. The figure can try to pass the Quality check as long as it still has at least one action.

If several figures must pass the test for the same reason, they must roll a die until one of them gets a success; from that moment on, all the remaining figures don't need to pass the same test.

If the NCO or officer is in sight when a figure must pass a Morale check, it can use the Morale value of the NCO or officer instead of its own.

13.4.2. Case #2, Leaving Cover

When a figure must leave cover and enter a space covered by the fire of a spotted enemy (i.e. a man that tries to set an explosive device on an enemy tank), it must pass a Morale Check.

As in the previous case, the Morale check is passed if the die roll is equal or less than the figure's Morale value, and to fail this test only means that that action is lost. The figure can try to pass the Quality check as long as it keeps at least one action.

If several figures have to pass the test for the same reason, they must roll a die until one of them is successful; from that moment on, all the remaining figures don't need to pass the test for that reason.

If the NCO or officer is in sight when a figure passes a Morale check, it can use the Morale value of the NCO or officer instead of its own.

13.4.3. Case #3 Acts of Valor

Sometimes, a figure finds itself in a position where the most likely outcome of the order it receives is sure death. Or the situation becomes so dangerous that the logical decision is to give up the position.

When this happens, the player must pass a Morale check to know if the figure accomplishes the order or not.

If the result is lower than the Morale value of the figure, the figure keeps fighting. During this turn and the whole next turn, the Aggressiveness value of all the friendly units involved in the calculations (including the figure) will be increased by one, and the Aggressiveness value of the enemy units involved in the calculations who witnessed the fighting will be decreased by one.

If the result equals the Morale value, the figure is confused and is unable to do anything, but stays in its position and keeps fighting.

If the result is greater than the Morale value of the figure, it gives up and deserts or surrenders (at the option of the controlling player).

During this turn and the whole next turn, the Aggressiveness value of all the friendly units involved in the calculations (including the figure) will be decreased by one, and the Aggressiveness value of the enemy units involved in the calculations who witnessed the fighting will be increased by one.

13.4.4. Case #4 Close Assault

This is a very special case, because it works in a different way, using the Morale values of both forces.

This rule is applicable only when:

- The attacker declares the assault and starts moving towards the position
- When a unit declares a close assault and the defender unit has no a leader with it and
- The defender unit doesn't have an explicit order to "defend that position"

If all the circumstances listed are met, then we apply the Close Assault Morale Check. Simply subtract the Morale value of the attacker from the Morale value of the defender and roll a die.

If the result is less than the difference, the defender leaves the position and retreats to the nearest cover.

If the result is equal to the difference, the defender player may chose to retreat or to fight.

If the result is greater than the difference, the defender aggressiveness is increased by one.

13.4.5. Case #5 Outgunned

Whenever an element receives fire from weapons of a higher tier, its considered Outgunned.

An outgunned figure must pass a Morale Check in order to keep fighting normally. If the figure fails the Morale Check, it will seek the closest protection and will Hunker down.

Check the tier of the weapon that fired, and subtract the tier of the weapon carried by most of the figures of the element that received fire.

WEAPONS HIERARCHY	
Weapon	Tier
Melee weapon	0
Bow, crossbow, sling	1
Single shot firearm	2
Pistol, Revolver	3
Bolt action rifle	4
Semi-automatic rifle	5
Sub machinegun	6
Assault rifle	7
LMG	8
MMG, launcher	9
HMG, flamethrower	10



Roll a die and add this value to the result. The Morale check is passed if the result is equal or less than the figure's Morale value.

The figure can try to pass the Quality check as long as it keeps at least one action.

If several figures have to pass the test for the same reason, they must roll a die until one of them is successful; from that moment on, all the remaining figures do not need to pass the same test.

If the NCO or officer is in sight when a figure passes a Morale check, it can use the Morale value of the NCO or officer instead of its own.

13.4.6. Prisoners (Optional)

A figure that surrenders will drop its weapons immediately and will head to the nearest enemy unit in sight, controlled by the enemy player.

From the moment that the figure surrenders and until the enemy takes control of that figure, it will have a Combat Stance of +1. From this point on, it will need an escort who will direct him.

If a prisoner's Aggressiveness increases beyond zero, the original player will regain control of it.

A figure can surrender during a Close Combat, as will be explained at "17.3. Automatic Surrendering in Close Combat" on page 79.

13.5. Interrogation (Optional)

A prisoner can be interrogated. The procedure is similar to the Morale Check of Case #4 Close Assault, but it consumes a whole turn for both, the prisoner and the interrogator.

Simply subtract the Morale value of the interrogator from the Morale value of the prisoner and roll a die.

If the result is less than the difference, the prisoner must declare his unit's intention and objective.

If the result is equal to the difference, the prisoner must tell the interrogator what is hidden in one "Mojon" or a piece of "Smart Scenery."

If the result is greater than the difference, this round of interrogation fails, and the prisoner's aggressiveness is increased by one.

14. AWARENESS (OPTIONAL)



SA-Kuva

14.1. Awareness Conditions (Optional)

Even in the worst battles, 95% of the fights occur in 5% of the time. Of course, these figures are just an estimate, but they give us some idea.

Between combats, the fighters need to rest, wash their clothes and weapons, prepare food, dig trenches and shelters or simply chat with their comrades. While they do these activities, they are relaxed and unaware of what is going on around them. The security lies in the hands of the outposts, lookouts, and patrols.

This is when we use the concept “Awareness Condition” as a measure of the alertness of the troops in a scenario.

We will base our system on the Color Code of Awareness put forward by Jeff Cooper (USMC-Ret).

14.1.1. Awareness Condition White

In “Awareness Condition White”, the troops feel safe enough to rest, eat, chat or do their “house work” unarmed.

Probably their attention is drawn somewhere else and they lose sight to what’s around them. They will feel shocked if attacked.

Example: Garrison troops or resting after a march, etc

In the game, this means that the defending force has some restrictions while they stay in this condition to reflect their absolute vulnerability.

- **No one is considered “in cover” or “hidden”.**
- **No one can try to spot.**
- **The reaction costs two actions instead of one, and requires a roll die bigger than the Quality.**
- **Troops are unarmed.**
- **Crewed weapons are unmanned and canvas covered.**
- **Parked vehicle engines are cold.**
- **Their Sight Threshold is halved.**
- **For automatic detection purposes, the “sound level” is increased by one.**

Any alert will trigger “Awareness Condition Yellow”.

14.1.2. Awareness Condition Yellow

In “Awareness Condition Yellow”, the troops alertness is quite similar to yours when you leave your home and look around the neighborhood just to make sure everything looks normal. They are doing their duties, relaxed, but taking mental notes of what happen around them.

Example: Outposts in a quiet remote, boring and deserted area.

In the game, this means that the defending force has some restrictions while they stay in this condition to reflect their relaxed attitude.

- **No one is considered “in cover” or “hidden”.**
- **The reaction costs two actions instead of one, and requires a roll die bigger than the Quality.**
- **Troops weapons are on back and side arms in the holsters.**
- **Crewed weapons are unmanned and probably canvas covered.**
- **Parked vehicle engines are cold.**

Any distant combat noise (light weapons) will trigger “Awareness Condition Orange”.

14.1.3. Awareness Condition Orange

In “Awareness Condition Orange”, the troops are alert and their attention is focused in something, but it may or may not prove to be a threat. The situation requires some attention, but not enough to drop the general awareness because this may happen a hundred times in a day.

Example: A sentry in a threatening and populous area. The men should keep an eye on every person they see in order to know if they are a threat, focusing on the next person as soon as they are satisfied no threat exists.

In the game, this means that the defending force has some restrictions while they stay in this condition to reflect their attitude.

- **No one is considered “in cover” or “hidden”.**
- **The reaction costs two actions instead of one.**

- **Troops weapons are on back and side arms in the holsters.**
- **Parked vehicle engines are cold.**

Any combat noise (light weapons) will trigger “Awareness Condition Red”.

14.1.4. Awareness Condition Red

In “Awareness Condition Red”, a possible threat has been identified, and becomes a possible target. They are ready to act, but the situation still can be reversed.

Example: A squad sees movement inside a house in a contested town, but they still don't know if the people they see are civilians or enemy troops.

In the game, this means that the defending force has some restrictions while they stay in this condition to reflect their doubts.

- **The reaction costs two actions instead of one.**

Any hostile action will trigger “Awareness Condition Black”.

14.1.5. Awareness Condition Black

In “Awareness Condition Black” there are no restrictions.



15. THE COMBAT

The combat includes fire that takes place in an open environment, indoors or in close quarters, but not in hand to hand fights.

In this chapter we will talk about:

- the combat damage
- how to use a weapon
- how to handle different kind of weapons
- snipers
- penetration of light weapons projectiles
- support weapons
- fire discipline
- identifying enemy leaders

15.1. Combat Damage

In Rattenkrieg! we will use the Combat Table most of the time, and for most situations.

COMBAT TABLE	
Roll	Means
1	Dead (Roll)
2	Dead
3	Wounded
4	Hunker Down/Stunned
5	No effect
6	No effect (Roll)

Dead means that the figure is removed from the game.

Wounded means that the figure is unable to fight or move. In some circumstances, a wounded figure can return to the fight, but we will talk about that in the Casualties chapter.

You will need to check every turn to be able to fight again.

Hunker Down means that the figure is forced to take cover (when under fire) and stunned men are simply rendered unable to fight for the current turn (usually because of the shockwave of a blast or a crash).

15.2. Light Weapons

We consider that at this scale, all weapons (except for pistols and revolvers) can kill objectives on the whole game table, so there are no restrictions regarding the range of shooting, (unless you chose to use the optional rule “Ranges and Weapons” or you play at a very small scale.)

The weapons shown in the tables are those most commonly used in the Second World War. If a scenario uses a different one, you will find all the relevant information in the OoB of that scenario.

For light weapons we define four characteristics: How they fire (shots or bursts), the damage they produce, expressed in dice (and modifiers), the penetration of the ammunition, and the “React” value.

“Type” tells us if the weapon fires a bullet once at a time, or if it fires a burst of bullets. “S” means single shots (so the weapon can be fired only against individual figures); “B” means burst (so the same burst may hit several targets). When one of these codes are preceded by a number, it means that the weapon can fire as many shots or bursts as indicated. If the prefix is an “X”, this means that there is no limit to the number of bursts the weapon can fire.

For example, the Type of the Mosin-Nagant is S, so it can only shot againts a single target every time it fires. However, a Browning BAR will fire up to two burst because its Type is 2B.

An “XB” is a typical feature of belt-feed machine guns.

We adjusted the lethality of the weapon including modifiers on a per weapon basis, and “Modifier” tells us the modifier we must apply when that weapon is fired. A “-” alone means no modifiers. A low value means a more lethal bullet; a high value means the opposite.

In the case of light weapons these changes are not very dramatic, but as you will see, when it comes to artillery shells or flamethrowers, the modifier may mean sure death.

For example: A soldier firing a Mauser 98k will roll one die every time he shoots his weapon against an enemy, and will subtract 2 from the die.

The next row tells us the penetration of the bullet. A high value will allow the bullet to perforate walls, but we will talk about this later in “The penetration in combat fire”.

For example: The same soldier, using his Mauser 98k could perforate a brick wall (because the brick wall penetration value is also 2), hitting a soldier hidden behind it, but it will not perforate a concrete wall (because the concrete wall penetration value is three).

The “React” tells us about the “reaction time”. This is the number of targets that must pass a damage check before the rest of the figures can react.

For example: A soldier using a Lewis fires against a group of eight men. As its React value is five, the first five men of the group must pass a Damage Check, and only the last three men will be able to react in order to avoid been killed or wounded.

This means that also this feature can be used to shoot to the same figures several times if the number of targets is less than the React value.

15.3. Short Version of Light Weapons Data

In the Order of Battle, and in the Vehicle Data Cards we use a shortened version of the Light Weapons Data. It is the same info you see in the table, but with the Penetration value after a “P” and the React value/s after an “R”.

The shortened data for a Mp40 looks like 3B+1(P1), and for an MG42 it looks like XB-2(P3) (R7,9,12).

LIGHT WEAPONS					
	Weapon	Type	Modifier	Pen	React
BA	Arisaka	S	-1	3	1
BA	Arisaka Type 99	S	-1	2	1
MG	Browning BAR	2B	-3	3	5
MG	Besa	XB	-2	3	7
MG	Bren	3B	-1	3	7
MG	Browning Cal. 30	XB	-2	3	5
MG	Browning M1917	XB	-2	3	8
RF	Carbine M1A1	S	-	2	1
PS	Colt M1919	S	+1	0	1
MG	DP28	XB	-	2	5
MG	Dshk	XB	-3	4	6
AR	FG 42	2B	-1	2	1
MG	Goryunov	XB	-2	3	6
BA	Lee Enfield	S	-1	2	1
BA	Lee Enfield N.5	S	-1	2	1
MG	Lewis	XB	-1	2	5
HG	Luger	S	+1	1	1
RF	M1 Garand	S	-2	3	1
MG	M2 Browning Cal .50	XB	-3	4	5
SMG	M3 Grease Gun	3B	+1	0	1
MG	MG34 (see 4.3.)	XB	-1	3	6,7,8
MG	MG42 (see 4.3.)	XB	-2	3	7,9,12
SMG	MP40	3B	+1	1	1
BA	Mas Modèle 36	S	-2	3	1
RF	Mauser 98k	S	-2	2	1
MG	Maxim	XB	-1	2	5
RF	Mle 24/29	2B	-2	3	1
BA	Mosin-Nagant	S	-2	3	1
HG	Nambu	S	+1	0	1
SMG	Owen	3B	+1	1	1
SMG	PPSh41	7B	+1	1	1
SMG	PPSh43	3B	-	1	1
RV	Revolver S&W .45	S	+1	0	1
AR	STG44	3B	-	2	1
RF	SVT-40	S	1	2	1
SMG	Sten	3B	+1	1	1
SMG	Thompson	3B	+1	0	1
HG	Tokarev TT-33	S	+1	1	1
SMG	Type 100	3B	+1	1	1
MG	Type 3 HMG	XB	-1	3	4
MG	Type 92	XB	-2	3	4
MG	Type 96 lmg	XB	-1	3	4
MG	Type 97 HMG	XB	-	1	5
MG	Vickers	XB	-1	2	5
PS	Walther p38	S	+1	1	1
RV	Webley MKIV	S	+1	0	1
*	Autocannons (up to 20mm)	NS	-4	6	4
*	Anti Tank Rifles	S	-4	6	1

15.4. Magazine-fed automatic weapons

When an automatic weapon is magazine-fed, it can shoot against every target present in as many 2" adjacent sectors as the number indicated by the B in the Type. This fire is accumulative, so - for example - a figure using a submachine gun with a Type of 3B (so it can fire three burst of bullets) may choose to fire against only two sectors, using one burst in one, and two in the other, but the player must declare how many bursts he will use in every area before casting the first die.

When one of these weapons opens fire, roll a die for every enemy inside the chosen area (2" wide, 10" depth), but keep an eye every time you roll a six. A single six means a miss, but a second six stops the burst (empty magazine, jam, or simply that the shooter stopped pulling the trigger), but this second six forces the player to roll another extra die, in the case of a third six, the weapon is jammed.

To clear a jam, the figure must spend an action and roll a die against its Quality; any result equal or lower than the Quality means that the weapon is ready to fire again.

If you roll all the dice at the same time, read them from left to right. In case of doubt, apply the worst case for the shooter.

If the weapon firing is not a machine gun, the enemies can react after the first shot is resolved.

15.5. Belt fed machine guns

When a machine gun is belt fed, it can hit every figure present in its fire arc. We marked these weapons with an X. When one of these weapons open fire, simply roll a die for every enemy inside the arc of fire.

MG ARC OF FIRE	
Mount	Fire Arc
Biped (prone), Tank Coaxial MG	30°
Biped (inside a trench)	60°
Tripod, Tank Hull MG	60°
Pintle	90°
Dedicated AA Mounting	180°

The enemy can react after the number of shots showed in the column Re are fired.

In the Second World War, some machine guns may work as light, medium or even as heavy weapons.

As light weapons, their fire rate is slower. They can be fired while being carried by a soldier or using a bipod. It is a very mobile weapon.

As medium weapons, they fire from a tripod, with a higher rate of fire. The weapon requires some time to be moved. Roll a D6; this is the number of actions needed to set up/take apart the tripod. Several figures may use their actions to do this process.

When they are used as heavy weapons, they can fire with their highest rate of fire. The tripod is heavy and includes some features as telescopic sights and equipment for indirect fire. The weapon requires some time to be moved. Roll 2D6; this is the number of actions needed to set up/take apart the tripod. Several figures may use their actions to help in this process.

15.6. Machine guns barrel change and jams

When a machine gun fires a high number of projectiles, it becomes really hot. If the heat is too high, the cartridge ready to be fired could be fed into a red hot barrel, igniting the propellant and creating a situation - called cock-off - where the weapon becomes uncontrollable and fires as long as there are cartridges in the belt. This problem can be avoided in three ways; water cooling the barrel (like the Browning M1919 or the Lewis), providing a mechanism to allow the change of the barrel when it is too hot (MG34 and MG42) or train the gunners to fire short bursts of three to five rounds in order to keep the temperature under control.

In the game, the Mg 34 and the MG 42, when firing at their maximum fire or rate, will need to change the barrel every time they do it, spending some actions in the process. The controlling player secretly rolls a D6 for the MG 34 (a D6-1 for the MG 42) and puts it beside the weapon, but out of the sight of the enemy (we use very small dice for this purpose). This is the number of actions needed to change the barrel, and the player is free to combine the actions of several figures to speed the process up.

Usually, the enemy will rush as soon as they notice that you need to change the barrel, this is why our advice is to keep this data as secret as possible. Once the barrel is changed, the player must show the enemy the dice.

And, of course, as in the case of magazine-fed automatic weapons, when one of these weapons open fire, roll a die for each enemy inside the chosen area but keep an eye every time you roll a six. A single six means a miss, but a second six stops the burst (a small problem with the belt, a jam, or simply that the shooter stopped to pull the trigger) and the weapon ceases to fire; this second six forces the player to roll another extra die, if the result is a third six, the weapon is jammed.

To clear a jam, the figure must spend an action and roll a die against its Quality; any result equal or lower than the Quality means that the weapon is ready to fire again. Keep in mind that if you lose your gunner, the Quality of the replacement gunner probably will be lower.

If you roll all the weapons dice at the same time, read them from left to right. In case of doubt, apply the worst case for the shooter.

15.7. Firing while moving

Figures armed with revolvers, semiautomatic or automatic weapons can fire their weapon (as in the "Shoot" action) while they move, but they must apply a modifier of +1. For this, they must use a Movement Tactical Order.

They can not Aim, or use Suppressive Fire, etc, just the normal fire with a penalty of +1.

15.8. Snipers & marksmen

Snipers can choose the target they fire at and they ignore all the positive Combat Modifiers, except for the penalization for shooting in reaction. Also, they use the scope magnifying factor of the weapon scope as a negative modifier; so a sniper using a 3x sight will have a -3 modifier for this concept alone.

Marksmen can choose the target too but they must apply all the Combat Modifiers that affect the shot.

But to have these benefits, snipers must deploy from their own mojon (they may have one assistant) and use their own Tactical Orders.

15.9. The penetration in the combat fire

Penetration indicates the possibility that a projectile pierces a surface and hits the target behind it. The same bullet or shell can pierce several planes as long as their sum does not exceed its penetration level.

LIGHT WEAPONS PENETRATION	
Pen	Explanation
0	Wooden doors, solid pieces of furniture, twig walls
1	Wooden floors, Wooden walls, Mattresses
2	Structured floors, Brick walls, Log walls, Sandbags, Metal sheets
3	Thick brick walls
4	Bunker floors, Concrete/Stone walls
5	Thick concrete/stone/ruins walls and rubble

It is not only about the resistance of a material to be penetrated by a shell; it also affects the capacity of the material to deviate, deform, or stop the shell.

15.10. Acquiring Targets

An element can help another element to spot or direct its fire against a particular target. To do so, it must fire an MG with tracers against that target, or use smoke, flares or White Phosphorus.

15.11. Combat procedure

In order to be able to shoot effectively against a target, the target must be Identified.

An element can only shoot against individual figures if their I-Factor is zero and they are less than 36 inches away.

But every combat situation is different and there are many circumstances that can affect every shot, so we need to take into account such factors.

15.12. Combat Modifiers

The modifiers are added or subtracted to the result of every dice rolled for a given shot.

They are cumulative, but a roll of one always means a possible death, even if the accumulation of modifiers makes it impossible to score a one. In this case, the active player rolls a die; if the result is bigger than the total of modifiers, the target is killed.

COMBAT MODIFIERS	
Situation	Modifier
The target receives fire from above (1)	-1
Combat Stance	n
Shooting while moving	+1
Cover	n
The shooter ran in the previous action	+1
Shooting (or throwing) in reaction	+1
Other element is designating the target	-1
Aiming Modifier	-n
Weapon Modifier	+/n

(1) In order to qualify for the “fired from above” or “fired from below” modifiers, the ratio distance:height must be at least 3:1 (example, less than a distance of 12 inches for a height difference of 4”).

On the other hand, a six always mean a possible “no effect” even if the accumulation of modifiers makes it impossible to score a six. In this case, the inactive player rolls a die; if the result is less than the accumulated modifiers, the target is saved.

15.13. Support weapons

In Rattenkrieg! the only difference between a figure and a support weapon is that the support weapon needs a gunner and one or more loaders and assistants in order to work properly, and often a leader to direct the fire or assign objectives and some riflemen to escort the crew and carry the ammunition.

The bare minimum crew to operate a weapon is specified in the weapon data listed in the scenario; but by default, to operate properly, most of the machine guns, mortars and field guns need a bare minimum of two men: the gunner and the loader; and when one of them gets killed, the problems start to arise.

To simulate this, every time the weapon fires with fewer men than the bare minimum, every six rolled means that something bad happens to the weapon. Just one six simply means that the weapon is jammed or that the ammo belt (or the mortar round, or artillery shell) needs some attention, so the gunner has to spend an extra action the next time he wants to fire. If more than one six is rolled, every extra six (discarding the first one) means that there is a mechanical problem in the weapon must be repaired.

To repair one mechanical problem, the figure (usually the gunner) must spend one action (or two, if he wants to avoid any noise) and roll a die. Any value equal or less than its Quality value means that the mechanical problem is fixed. It must be noted that all the support weapon gunners have a Quality bonus of +1 when doing this.

When it comes to destroying support weapons, they are considered like one more figure. “Dead” means destroyed and “wounded” means one “problem” to be fixed. It is up to the owner player to determine how the damage is distributed between the crew and the weapon itself.

All the figures engaged in combat are considered in cover because we suppose all of them are trying to stay alive, and they will move and behave cautiously. So, as long as a figure is in “Combat Stance”, it will be considered “in cover”.

Only figures unaware of the proximity of the enemy, running, climbing, jumping, stunned, or wounded can’t claim this benefit because we consider that they are not actively working for their safety.

15.14. Machine guns rate of fire (Optional)

The rates of fire that can be used with the machine guns are sustained, rapid and cyclic.

15.14.1. Sustained fire

Short burst (3-5 rounds each), the gunner pauses 4-5 seconds between bursts. Reaction time is one. No double-six penalty. Additional fire bonus -2.

15.14.2. Rapid fire

Burst of 10-12 rounds. The gunner pauses two to three seconds between bursts. Reaction time is two. Double-six means the burst ends immediately. Additional fire bonus -1.

15.14.3. Cyclic fire

The gunner holds the trigger to the rear and ammunition is fed into the weapon uninterrupted. Reaction time is given in the weapon definition. Double-six rule applies normally. No bonus.

15.15. Hunker Down!

This is a special action that allows you to take cover when you declare so, and almost in any situation even though the element does not have any actions left, as these are required only to exit this state.

When an item is Hunkered Down!:

- It can not react to anything, not even sound
- If under cover, it can not be fired at
- If not under cover, it receives a +1 for additional Cover

- Two actions are needed to be able return to combat

This action is very useful when a machine gun or a mortar unexpectedly opens fire on an element, or if the actions have been completed and the enemy is placed in a position from which it can annihilate the target. Or when a figure has to jump from a transport vehicle on fire.

It must be used very carefully, and even more so if the enemy can reach the element that is Hunkered Down and annihilate it.

15.16. Bad fire discipline (Optional)

One of the duties of NCOs and Officers is to direct their troop's fire, so, if a figure or element is out of sight of its leader when it spots an enemy, it may fire the weapon of its own accord. This counts as an automatic reaction and will activate the Tactical Order or the Mojon.

When this happens, roll a die; with a result lower than the Quality of the figure, he fires the weapon. Keep in mind that maybe, due to the Aggressiveness rule, he may shoot an unaimed burst or shot, revealing his position.





For example, an officer wearing breeches, (2) peaked cap, (2) pistol holder, (1) binoculars (1) and a standard tunic with officer shoulder straps (1) gives a value of seven, so it will be identified automatically.

That officer probably will be the perfect target for an enemy sniper, but at the same time, he will be able to issue orders to men from other units or branches of the same army.

15.17. Identifying a Leader (Optional)

If the players agree to use this rule, we recommend using private figures to represent NCOs and officers so that the Leaders are not properly identified by the enemy.

A leader is one of the most desirable targets in combat, so as the war progresses, many of them hide their rank attributes on display in order to maintain a low profile. On the other hand, these attributes could help a leader give orders to men from other units or branches. The basic range where a leader can be identified is 18 inches, so in not so good visibility conditions, for example, at dusk (Visibility Condition of 2) the leader of an enemy unit can be targeted at a distance of nine inches. But of course, it depends on the equipment and attitude of the leader.

LEADERS VISIBILITY	
Situation	Value
Slight differences in the uniform	1
Carrying binoculars, map case, pistol holster (each)	1
Wearing shoulder straps, pips, rank patches, etc	1
Wearing different headgear, breeches (each)	2
Using a different weapon	2
Issuing orders	2
Wearing or using sables,	2

Whenever a player needs to identify an officer, add all the values that apply to that officer, and roll a die. If the result is equal or lower than that value, the officer has been identified.

15.18. Ranges and Weapons (Optional)

15.18.1. Handguns

Handguns have a variable damage depending on range. Simply subtract or add the modifier expressed between the brackets) at the given ranges.

HANDGUNS IN COMBAT				
Handgun	Modifier by Range			
Pistol	0-5 (-2)	6-10 (-1)	11-20	21-40 (+1)
Revolver	0-5 (-2)	6-15(-1)	15-30	31-60 (+1)

The extreme lethality at very close range represents the ease of aiming and shooting with a handgun. The slightly better performance of revolvers in higher ranges represents the also slightly better accuracy of revolvers over semi-automatic pistols back in the 1930 and 40's.

15.18.2. Sub machine guns

Magazine-fed automatic weapons have a variable damage depending on range. Simply subtract or add the modifier expressed between the brackets at the given ranges.

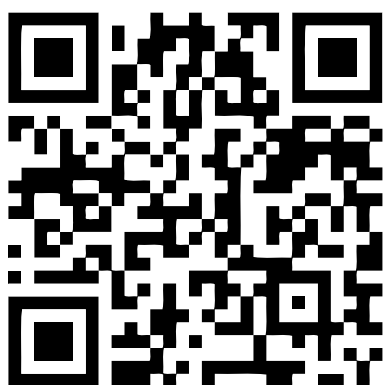
SUB MACHINEGUNS IN COMBAT			
Modifier by Range			
0-35 (-1)	35-70	70-105 (+1)	105-150(+2)

15.19. Fire Priority

When in doubt, the elements will direct their fire against the enemy with the lowest value showed in the “Fire Priority” table.

If an enemy of a higher value is closer than an enemy with a lower value, the former’s value is lowered by one. In case of a tie, the player can choose the enemy he wants to shoot at.

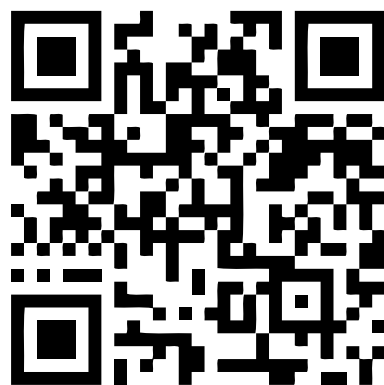
FIRE PRIORITY											
Firing Element	Riflemen	MG	AT Teams	AT Guns	Other Art	Mortars	Buildings	Softskinned	Tanks	Boats	Planes
Riflemen	1	1	1	3	3	1	2	1	2	1	2
MG	2	1	1	2	2	1	1	1	3	1	2
AT Teams	3	3	3	2	2	3	1	2	1	3	3
AT Guns	3	2	2	1	1	2	1	1	1	1	3
Field Artillery	1	1	1	1	1	1	1	1	1	1	4
Mortars	1	1	1	1	1	1	1	1	1	1	4
Flamethrowers	1	1	1	1	1	1	1	1	1	2	4
Tanks	2	2	1	1	2	2	1	1	1	2	4
SPGs	1	1	1	1	1	1	1	1	1	2	4
Tank Destroyers	2	2	2	1	2	2	1	2	1	2	4
Light AA	1	1	1	1	1	1	1	1	1	1	1
Heavy AA	3	3	3	2	3	3	2	1	1	2	1



“Men Against Tanks”
German Quality Film



Us Rifle Platoon
tactics (History-Tube)



German Section
tactics (OSS)



Us Rifle Platoon
manoeuvre

16. CASUALTIES AND FIRST AID



16.1. Wounded

When a figure is wounded he can't fight or even move by himself, at least temporarily.

The wounded status is immediate. The figure is knocked out, falls down and drops the weapon, but he keeps his gear (if he has any).

If a wounded figure is wounded again, the figure is removed from the game.

From that turn on, the player can try to recover the figure rolling a die.

With a roll of 1, 2 or 3, the figure survives and is able to rejoin the fight. With 4, 5 or 6, the soldier is removed from the game.

Most of the time, the player will roll the die for this Ultimate Check immediately, but this system allows the player to delay this process for campaigns, and when there are Aid-men or Combat Medics in the scenario.

Figures removed from a game can't be used again in future games of the same Campaign. A wounded figure evacuated through the friendly side of the table is considered recovered for the next game in the same Campaign.

16.2. Stunned

When a figure gets stunned it means that it can't fight or even move by itself, but this only lasts for a few moments.

The stunned status is immediate. The figure becomes confused, falls down but it keeps its weapon and gear (if it has any).

A stunned figure will recover automatically at the end of the same turn it was stunned.

16.3. First Aid

There are three levels of medical aid in the battlefield. All of them are capable of moving a wounded figure without harming it further. However if a wounded figure is moved by a normal trooper it must roll a die to know if the figure survived the process (a six means that the wounded figure died).

In order to treat or evacuate a wounded figure, the sanitary personnel must be in base-to-base contact with the wounded.

16.3.1. Litter bearers

These are normal troopers but with basic medical knowledge; just enough to evacuate the wounded without risking the life of the casualty.

Two litter bearers are needed to evacuate a wounded figure, moving 4" per action (modified by the terrain).

16.3.2. Aid-man

Provides first aid to the wounded, stops the bleeding and carries out bandaging. They subtract one from the die roll.

16.3.3. Combat medic

Usually they are not attached to first line units. They can make a proper diagnosis, treat wounds and apply a more permanent bandage, as well as administering blood plasma if needed, etc. They subtract two from the die roll.

16.4. Advanced Wounds System (Optional)

This rule is only recommended for campaigns or games with very few figures, as it reflects the effects of cavitation on soft tissue depending on the kind of weapon.

Keep track of the weapon that causes each wound, and each turn rolls a die. If the result is listed under the column named “Recovers,” the figure survives and can keep fighting. If the result is listed under the column named “Dies,” the figure is dead and removed from the game. If the result is not listed, the figure stays wounded.

Women subtract 1 from the die the first time they roll.

ADVANCED WOUNDS SYSTEM						
Weapon	First Turn		Second Turn		Third Turn	
	Recovers	Dies	Recovers	Dies	Recovers	Dies
SMG, Pistol, Revolver	1	5,6	1,2	5,6	1,2	3,4,5,6
Rifle, Machine Gun	1,2	6	1,2,3	5,6	1,2,3,4	5,6
Shotgun, Bladed weapon	1	5,6	1,2	4,5,6	1,2	3,4,5,6
Shrapnel	1	4,5,6	1,2,3	5,6	1,2,3,4,5	6
Explosion, Blast	1,2,3	6	1,2	5,6	1	2,3,4,5,6
Any other	1	6	1,2	5,6	1,2,3	4,5,6



17. CLOSE QUARTERS COMBAT

This is the combat that takes place when figures engage the enemy at very close range (from a few yards up to the hand to hand combat).

17.1. Close quarter combat

It's a very fast and violent take-over of a position, room (or any confined space) controlled by the enemy, who have no easy way to withdraw. So basically the situation becomes a mess where there is only one winner.

The Close Combat is not an action. It is just a combat resolution system that triggers every time two figures of different sides are in physical contact.

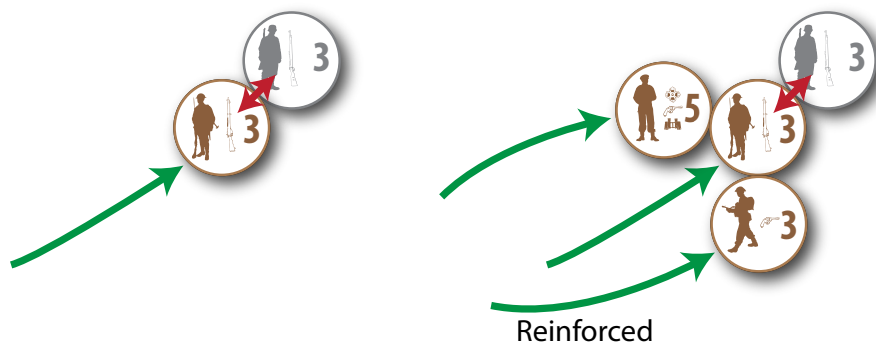
As this is not an action, even figures without unspent actions can fight in Close Combat. However, stunned or hunkered down figures are not allowed to fight; they are killed or taken prisoners at the attacker's choice.

If any figure not engaged in the melee fires against a Close Combat melee, the casualties will be taken from the figures present at the melee, ignoring their side.

Support weapons can't be used to fight in Close Combat unless they are part of the melee. But in this case, only the side weapons of the crew can be used. The only exception are portable LMGs.

17.2. The Close Combat Procedure

A Close Combat is triggered when the bases of two or more figures of both sides are in physical contact. The player that wants to start the Close Combat simply moves their figures until they touch the base of the enemy figures. He can "reinforce" one of the figures already touching the base of an enemy figure simply moving up to two figures more until they touch the base of the friendly figure already engaged in Close Combat. These figures will not fight by themselves, but they will help their comrade.



Several figures may attack the same figure at the same time, and each attacking figure may be reinforced.



The Close Combat is resolved for every group formed (being a group all the figures, attackers and defenders) in physical contact, and this process is repeated until there are no figures in physical contact.

The first step is for both sides to calculate their modifiers shown in the next two tables. Remember to add all the modifiers applicable, so if the attacker side has three figures in contact with only one defender, the weapons of all the three figures will be added as modifiers. Reinforcement weapons are not used as modifiers.

There is one table for the attacker:

CLOSE COMBAT MODIFIERS FOR ATTACKERS	
Weapon	Modifier
Bare Hands	-3
Knife/Improvised Weapon	-2
Gun/Revolver	-1
Rifle	0
Rifle with Bayonet/Assault Gun	+1
Submachine/Sword/Cutlass	+2
For every figure helping	+2
LMG/Polearm	+3
Surprise Attack (explained at "17.4. Surprise Attack" on page 79)	+4

And another one for the defender:

CLOSE COMBAT MODIFIERS FOR DEFENDERS	
Weapon	Modifier
Bare Hands	+3
Knife/Improvised Weapon	+2
Gun/Revolver	+1
Rifle	0
Rifle with Bayonet/Assault Gun	-1
Submachine/Sword/Cutlass	-2
For every figure helping	-2
LMG/Polearm	-3

Then a die is rolled, and both modifiers are added to the die roll, and the result of the fight is given in the Close Combat Table.

CLOSE QUARTER COMBAT	
Roll	Effect
1	Attacker dead
2	Attacker wounded
3	Attacker retreats 1"
4	Defender retreats 1"
5	Defender wounded
6	Defender dead

The effect applies only to one of the front rank figures (if there are several, just roll a die to pick one). Retreating figures simply push back their reinforcements, if any.

If after this round there are still figures from both sides in contact with the group, the procedure is repeated until the contact between attackers and defenders is lost.

17.3. Automatic Surrendering in Close Combat

When the Modifiers are so unbalanced that they mean a sure death, (because even with a die roll of six, the defender will die, or because even with a one the attacker will die) the figure will surrender automatically (unless you are playing with Aggressiveness, then the Aggressiveness rule is applied).

17.4. Surprise Attack

The "Surprise Attack" is lethal. This advantage is achieved only when both conditions are met:

- the enemy is caught before it can effectively react
- and the attack is from behind

Maybe the defender detected the threat, and reacted, but failed the Initiative to face the enemy in time. This is why we say "effectively react". The reaction alone is not enough to avert danger.

To know when an attack is from behind we use the same criteria used to know the combat stance of a figure. In this case, the defender must be in "Combat Stance of -1".

18. BUILDINGS

This chapter covers some specific procedures that come handy when it comes to fighting in built-up areas.

18.1. Fighting in buildings

In urban areas, or simply every-time forces must fight inside a building, movement becomes an issue because the space is fragmented and complex.

So, in Rattenkrieg! you simply use “actions” to move from one space to the adjacent. To enter or to exit a building costs one action; to move from a room to the next one, costs an action; and to use the stairs to move to the upper or lower level costs one action.

Only if a room is bigger than 36 square inches, we divide it into two, so a big factory, 20” x 40” will probably be easier to handle using the standard system of 4” per action. But we are talking here about urban combat, and room to room fight.

Moving into a room does not mean that every soldier moves to the best position to defend that room. If the unit is attacked in this stage, only two men can return fire, despite the physical position of the figures. For this, you need one extra action.

Meanwhile, as in all the other situations where the figures receive fire from an unsuspected side, only two men from the group will be able to return fire.

The other difference is related to the use of hand grenades. Inside the buildings, the hand grenade is marked to land in the center of the room; always. Only if the room is bigger than 36 square inches, can it be placed as usual.

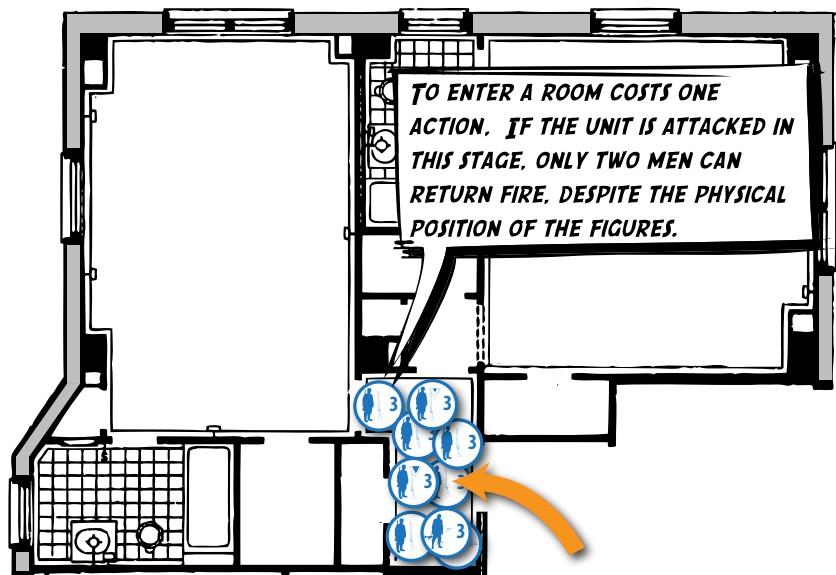
For this purpose, stair landings are considered a room.

When throwing a hand grenade, the deviation rule makes it collide against a vertical surface, we consider it stops against that surface. This means that if you toss a hand grenade upstairs, there is a big chance than it will come back at you.

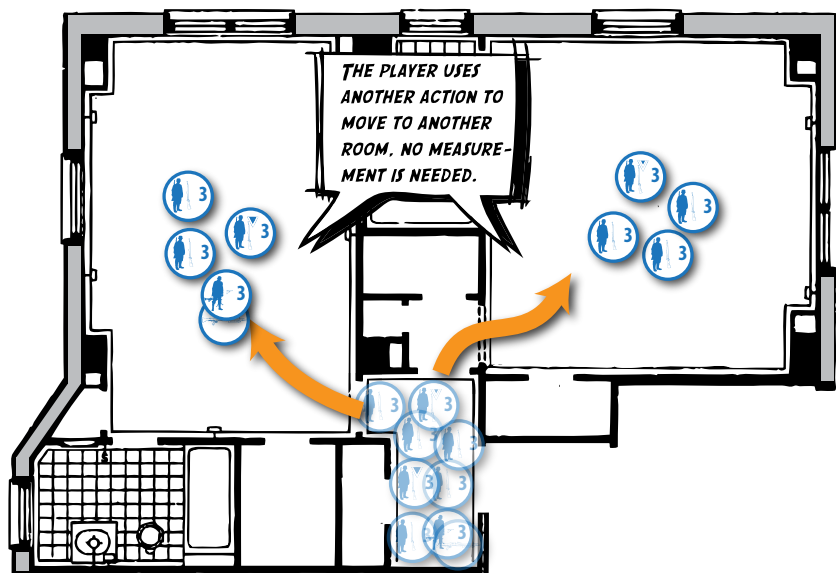
Until stated otherwise in the scenario, only two men can fire from any window, door or staircase.

18.2. Example of movement inside a Building

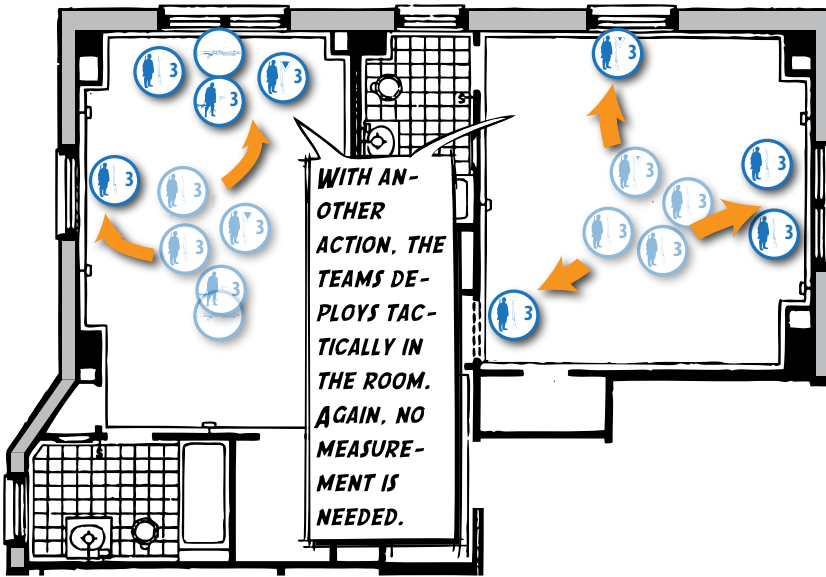
A Blue squad enters a flat using one action.



With the second action, each fireteam enters a different room.



With a third action, every member of the fireteam members deploy tactically. No measurement is needed.



So when you prepare your OoB you can roll a die for each soldier: For American, European or African soldiers, a die roll of one means that soldier is left handed. For Asian soldiers, roll a die, and if the die roll is a one, roll again. With a one or a two, the soldier is left handed.

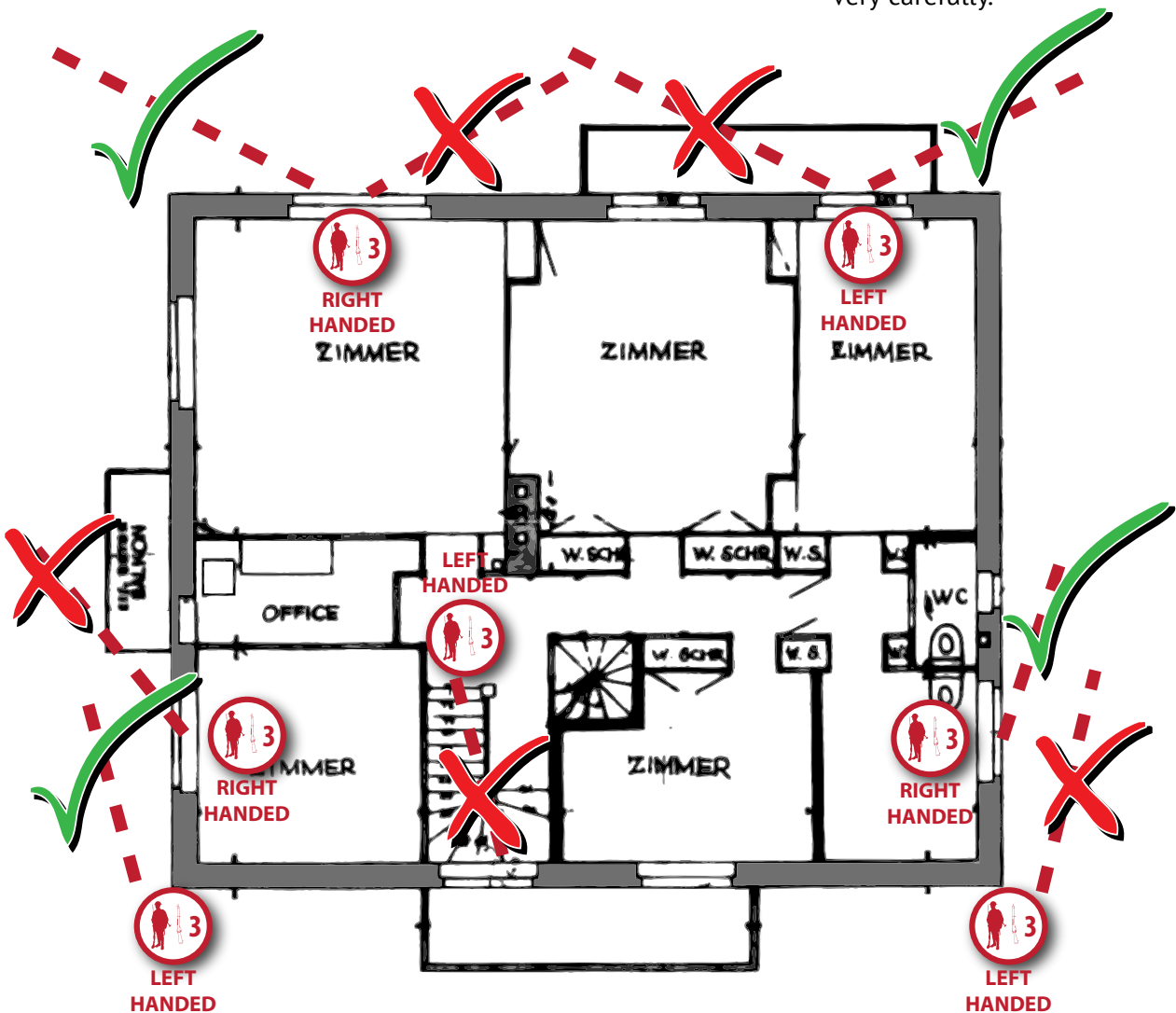
This characteristic is only important when the fight takes place in built-up areas, because of the natural difficulty to use a right handed weapon when taking cover from the right side. And the opposite happens to left handed soldiers.

For this reason, whenever one figure is in this situation, it can not use its weapon.

If you play with this option, you should prepare your advance plan very carefully.

18.3. Left Handed Fighters (Optional)

Only one of each six American, European or African soldiers is left handed. And only one of each twenty Asian is.



18.4. Damages to Buildings

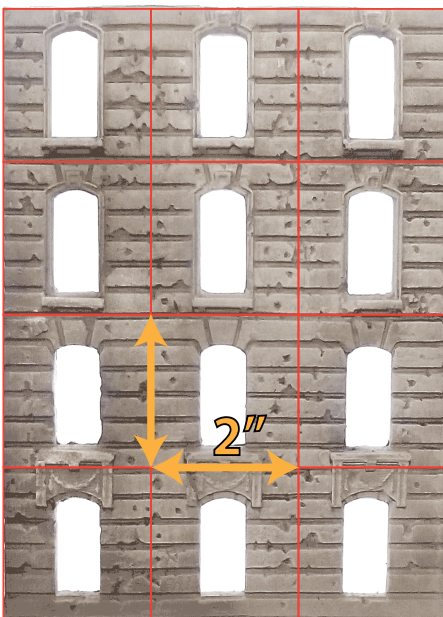
Building walls sections are defined by areas two inches wide, and one storey high, and the material they are built of.

Floor sections are defined by the walls that surround it, and the material they are made of.

The penetration value of the material is also the number of Damage Points that section of wall - or floor - can endure before to collapse.

LIGHT WEAPONS PENETRATION	
Pen	Explanation
0	Wooden doors, solid pieces of furniture, twig walls
1	Wooden floors, Wooden walls, Mattresses
2	Structured floors, Brick walls, Log walls, Sandbags, Metal sheets
3	Thick brick walls
4	Bunker floors, Concrete/Stone walls
5	Thick concrete/stone/ruin walls and rubble

For example, this facade is composed of twelve Stone Wall Sections (so each may bear up to five Damage Points).



In some circumstances, the buildings receive damage due to fire, or if a vehicle crashes into it.

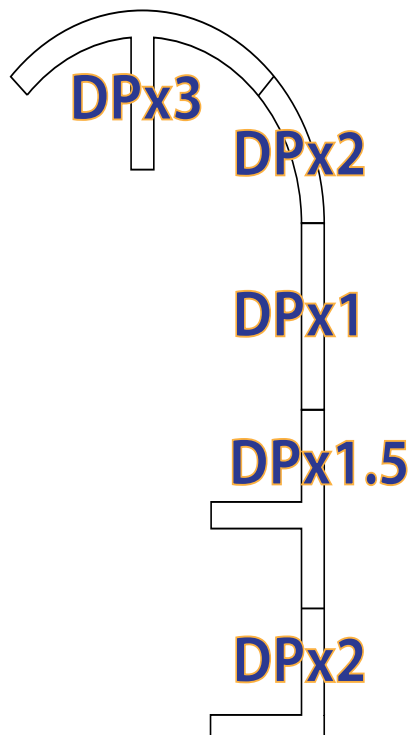
The damage follows the same notation used with shells and other explosives, being a number of dice and a number that gives us the "Damage Severity".

For example; 6D(5) means that the player will roll six dice, and will add up the results less than or equal to five, so if the player rolls 3, 4, 6 (ignored, because it is bigger than the Damage Severity), 5, 3, and 1, the final count of Damage points will be sixteen (3+4+5+3+1 = 16).

But not every wall section of a building takes the same Damage Points to be destroyed, even if all of them were built with the same materials.

Walls with doorways or windows have one and a half their standard Damage Points.

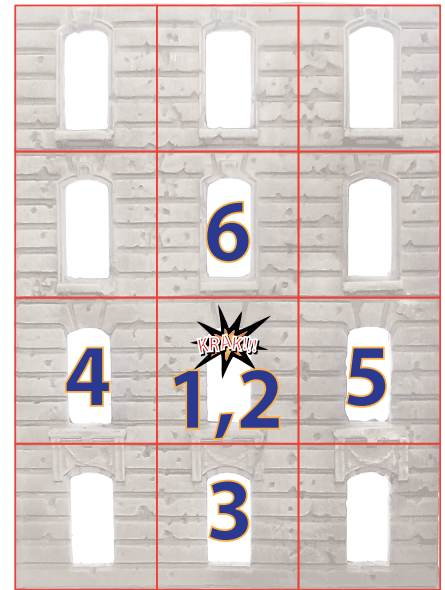
Corners, walls connected with other walls (T or +), curved walls and curved walls connected with other walls are stronger than normal walls, as shown in the following diagram.



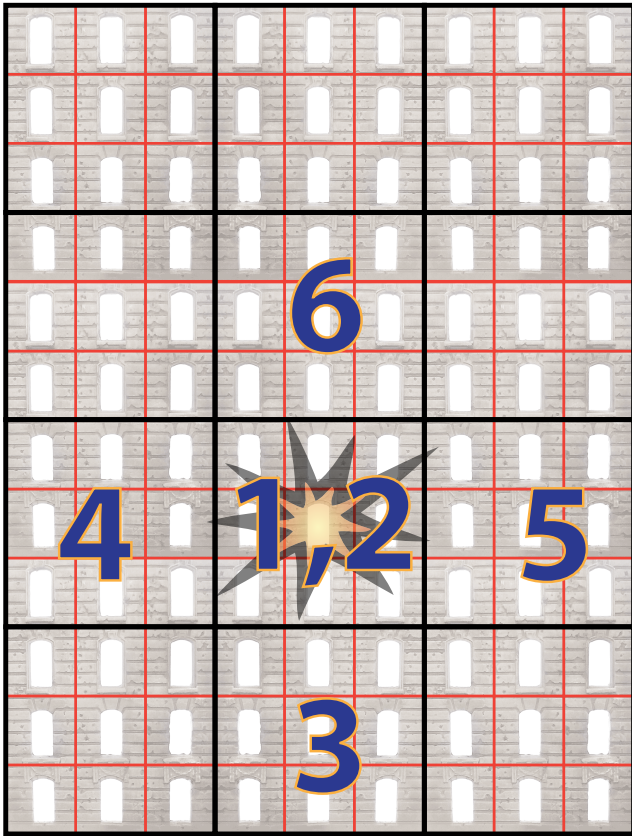
18.4.1. Damage Propagation in Buildings

When a building gets hit, the Section impacted is the very first to be damaged, absorbing the corresponding DP. The remainder unused Damage Points are then used to keep damaging adjacent Section, rolling a die to know which sector is the next.

If the die roll result points to one Section already destroyed, the next floor or wall behind it, is affected. If there are not enough Damage Points to destroy it, you can choose between putting a marker (a small die) beside the sector, or rolling again. This process is repeated until all the DP are used up.



If the number of Damage Points is really big, use groups of nine sectors (three by three) as only one unit.



If there are figures present where a Section collapses, they must check in the Combat Table with the Section material as negative modifier.

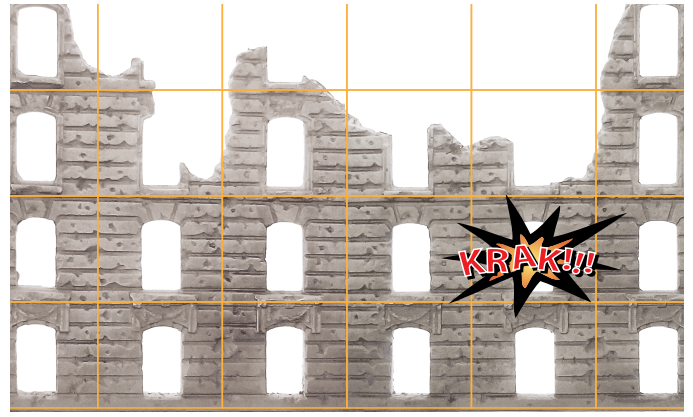
18.4.2. Collateral Collapsing in Buildings

Every time a Section collapses, it can damage the Section directly below it.

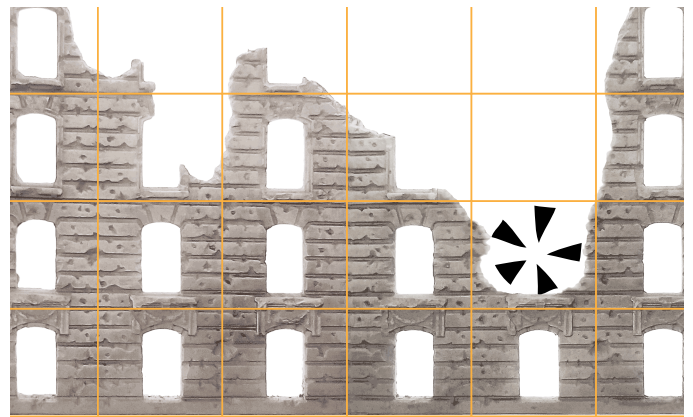
The player rolls a die, and if the result is equal or below the collapsing Section standard material value, this value is subtracted from the Section immediately below, so it becomes weaker.

18.4.3. Example of Building Damage

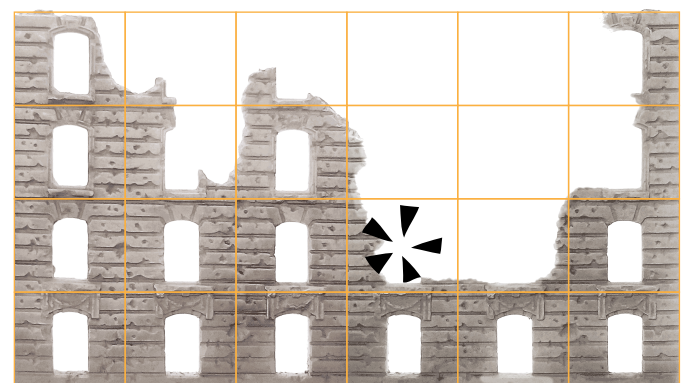
Let's use the 16 Damage Points calculated in the previous example to destroy an already partially destroyed stone facade. There is an impact at the point marked in the illustration.



The stone wall section standard Damage Points are five, but there is a window in it, so we must multiply it by 1.5 (rounded down); this gives us seven Damage Points. The impact produced 16 Damage Points, so we can remove that wall section using seven of them.



The section above the affected area (1 Floor, with 2 DP because it was Structured Floor) is removed, a die is rolled to see if this Collateral Collapsing produces further damage to the floor below, but the player rolls a three, so nothing happens. However, we have still eight DP left. The player rolls a die and gets a four, so we use seven DP more to destroy the wall in the left side. The last DP is lost because there is not enough to keep destroying walls.



19. SPECIAL RULES



19.1. Dogs (Optional)

Dogs have a “sight threshold” of 60. Obviously, this doesn’t mean that they see much better than humans. In fact, we will use the term “Visibility” simply because we will also use the same procedure to simulate how dogs detect enemies in the battlefield. What we try to reflect here is that the same circumstances that make the air “thicker” when it comes to vision, affect the transmission of sounds and smell too. The only exception are those situations relating to light. So, in order to know if a dog detects an enemy, we will use the following table.

TABLE OF DETECTION FOR DOGS	
Situation	Visibility
Clear day	0
Light Rain, Dust	1
Smoke, Indoor	2
Snow, Fog, Bushes	2
Heavy Fog, Heavy snow, Forest	3
Jungle	4

As you can see, it is basically the same table used for Visibility, but without any reference to light conditions.

When it comes to sound, the distances to be detected must be multiplied by three. So a dog will hear the voice of an enemy, in combat conditions not at 34” but up to 102” away. Dogs are defined by the same values as humans; Quality and Aggressiveness. They have three actions.

The dog is only able to obey one simple order (attack, come back, go there, etc), and will use its own actions to accomplish it. To issue an order costs the handler one action.

The dog will only obey orders from its handler.

Military dogs can be trained to be quiet when ordered to do so.

The handler sets and controls the Aggressiveness of the dog, but for this, both must be able to see or hear each other.

If the handler is killed, only another dog handler can control it. If there are no other dog handlers, it will be removed from the game.

Shots against dogs always have a penalty of +1 due their relatively small size and high speed.

When the handler is not controlling the Aggressiveness of the dog, we use the following tables:

CHANGES IN AGGRESSIVENESS FOR DOGS	
Situation	Change
Death of the handler, roll a D6; with one or two	-3
with three or four	no change
with five or six	+3
The handler is being attacked in close assault	+5
Detection of an enemy and	+2

MODIFIERS TO AGRRESSIVENESS FOR DOGS	
Circumstance	Modifier
The enemy is running away	+3
The enemy is unconscious	-1
The enemy is not a soldier	-2

19.2. Cavalry (Optional)

Cavalry units works the same as infantry, but when dismounted, one of every four figures must remain with the horses.

Horses have the same actions as their rider when they are being ridden.

Horses can move up to 24" per action.

If a rider wants to shoot while the horse is in motion, he must add one to the die for every 6" moved during that action.

Horses are not affected by wounds and need to be "killed" twice to be removed from the game.

Horses without a rider or a handler will be removed from the game. They don't fight.

Riders falling from a horse (because the horse is killed or because they have been wounded) must roll a die; with a result equal or less to the speed of the horse that action divided by 6, they receive a wound.

Example, a rider that falls from the horse while galloping at 22" (22 / 6 = 3.6 rounded to 4) must roll a die and get a five or six to stay safe and sound.

19.3. Infiltration Rule (By Scenario)

This rule must be used when the scenario allows for this option because it can have a strong impact on the gameplay.

When this rule is active, every time an element reaches the Movement Tactical Order, it does not need to use up an action (in other words, it moved for free).

The only condition to get this bonus is that all the components of the element must move in the same general direction, and the Movement Tactical Order must be as far as the terrain allows to move normally (four inches in normal circumstances).

Once the element reaches the Movement Tactical Order, the player can place it again to repeat the process as many times as the player wants.

19.4. Multiscale Games

Rattenkrieg! can be player using any of the following scales: 54mm or 1:32, "O" or 1:48, 28mm or 1:56, 20mm or 1:76, 15mm or 1:100, 6mm or 1:300 and 3mm or 1:600. The conversion tables are listed at the end of the rules.

For shooting beyond 500m use the following table:

LONG RANGE ARTILLERY/TANK SHOTS		
Distance	First Shot Die Roll to Hit	Follow-up Shots Di Roll to Hit
0- 100m	1-6	1-6
101m - 500m	1-6	1-6
501m - 1000m	1-3	1-4
1001m - 1500m	1	1-4
1501m - 2000m	1 and then a 1-3 second die roll <= Gunner Quality)	

DISTANCE EQUIVALENCE FOR GUNS							
Units	cm	cm	in	cm	mm	mm	mm
Range	54mm	1:48	28mm	20mm	15mm	6mm	3mm
100m	311	207	70	52	996	348	165
500m	1560	1040	351	258	4993	1747	829
1000m	4445	2962	1000	736	14224	4978	2362
1500m	6668	4442	1500	1104	21336	7468	3543
2000m	8890	5923	2000	1472	28448	9957	4724



THE BIG GAME

SOMETIMES BRAVE MEN AND LIGHT WEAPONS ARE NOT ENOUGH. IN THESE CHAPTERS YOU WILL LEARN TO HANDLE EXPLOSIVES, HEAVY AND SPECIAL WEAPONS, AND THE BASIC CONCEPTS ABOUT LIGHT AND ARMORED VEHICLES. OUR ADVICE IS TO READ THESE CHAPTERS IN A CASUAL WAY A COUPLE OF TIMES. BEFORE TO STUDY THEM.

Guns and Shells
Hand Grenades
Vehicles, Basic Concepts
The Data Card in Detail
The Protactor
Crews
Firing the Gun
Guns and Mortars
Anti Tank Rifles and Rocket Launchers
Anti Tank Mines and Explosives
Fire, Smoke, Flamethrowers and Flares

20. GUNS AND SHELLS

20.1. Guns and Shells

In Rattenkrieg! every vehicle/gun is defined by the gun itself, and the shells it can shoot. In this chapter we will talk about the guns and the shells, but not about how to fire a gun; this will be explained in a separate chapter. Now, simply relax and try to grasp the concepts you need to know before shooting the first shell.

20.1.1. Gun Information

Many times, the same gun (slightly modified) was mounted on a gun carriage, on a tank and on a tank destroyer; or the barrel was lengthened or shortened; or it was equipped with a muzzle break or different sights.

These circumstances lead to differences in accuracy of the weapon and the loading time, and sometimes they affect the muzzle velocity of the shells, thus improving or worsening the ballistic properties of the projectile. For these reasons, you will see that the same shell, when shooting from different versions of the same gun, may have different penetration values.

The identification itself is just informative, but the main characteristics of a gun are the “Shots per turn” it can fire, and the “Gun Sight”.

20.1.1.1. Shots per Turn

Guns may shoot more than once per turn. The Shots per turn depend on the rate of fire of that gun and the specific ergonomics of the turret (if mounted on a vehicle), and the Quality of the loader. This number of rounds must be divided into four. Any remaining round is added to the first impulse the gun is fired.

Example; the KwK 40 L/48 (a gun mounted on a tank) can shoot as many rounds as the “Loader Quality” of the crew in a turn. If the Gunner has a Quality of three, this means that the gun may fire a maximum of three rounds in a turn.

If the “Shots per turn” was “Loader Quality + 4”, then the number of rounds could be seven. And seven divided into four actions gives us three impulses with two rounds, and one with only one.

Always, the biggest number of rounds are assigned to the first impulses.

If this gun only shoots once in a turn (for any reason), it will be able to shoot a maximum of two rounds. If the same gun shoots in two impulses of the turn, it could shoot two rounds the first impulse, and another two in the second round. It could fire all the rounds only if it uses the four impulses to shoot.

20.1.1.2. Gun Sight

The gun sight is critical when it comes to aim against a target, and it is used when the gun fires against an enemy. The higher the value, the better for the gun.

20.1.2. Shell Information

As we stated before, the same shell, when fired from different guns, may have different characteristics. Also, every shell was designed for a specific purpose. Some were solid shots, devised to perforate the enemy armor; others were filled with explosives, to destroy the objective due to the blast; others were conceived to penetrate concrete walls or thick armour thanks to the Monroe effect.

For this reason, we give the player all the information needed to choose the right shell for the right target.

But let’s take a look at the information provided for every shell.

Shell: Name of the shell.

Type: Ammunition type, like AP - Armor-piercing; AP-T - Armor-piercing Tracer; HE - High explosive; HEAT - High explosive anti-tank; HEF - High-explosive fragmentation, etc.

20.1.2.1. Against Armor

If the shell hits an armored vehicle or a bunker, this is the data (marked as A) used to resolve the impact. The penetration comes in mm, and the damage in number of dice. So “120mm/5D” means that the shell will pierce up to 120mm of armor and will produce five dice of damage.

Keep in mind that the number of dice is also the maximum amount of damage each of those dice can produce.

For example, in the table below, the PzGr.39, at 100m can perforate 136mm and deliver four dice of damage, but the damage per die is limited to four, so in the best case scenario, it could produce 16 (4x4) damage points.

If the shell hits a concrete bunker, the penetration is reduced by 25% (rounded down), so “120mm/5D” become “90mm/5D”.

If an AP shell (with or without explosive charge) hits a building, it simply passes through the walls, killing only those figures directly in its trajectory but losing penetration power as listed in the following table.

LOSS OF PENETRATION	
Explanation	Loss
Floors, wooden panelling, mattresses	10mm
Brick walls, log walls, sandbags, roofs	20mm
Thick brick walls	30mm
Concrete/stone walls	40mm
Thick concrete/stone/ruins walls	50mm

20.1.2.2. HE

This is the info needed (Marked as B) you need when a HE shell hits an unarmored vehicle. In this case, the table gives us the number of dice we must roll, and the maximum amount of damage each of those dice can produce.

Using the same Pz.Gr.39 of the previous example, “1D(4)” means that the player will roll one die, damaging the vehicle with any result from 1 to 4.

20.1.2.3. Against Other Targets

The next columns are the ones used to resolve the damage against unarmored targets, buildings and living beings. Basically, the five columns tell us what happens between the impact point and the radius noted in that column.

We divided the shockwave energy in five concentric “rings” (the fifth being the impact point). As the energy drops very fast, the width of each “ring” depends on the explosive charge of the shell and its fragmentation.

When the shell hits a vertical surface, use the radius normally, and measure the distances vertically and horizontally (the blast and the shrapnel work in a spherical way). But if the shell hits the ground, the area affected is not circular, but more like a sausage (when the shell explodes, the shell casing is projected outwards, and being cylindrical [the tip and the bottom are too small to be considered], the small fragments hit the ground perpendicularly to the trajectory), so the width of the affected area is that shown in the data, but the depth is half that number, so a radius of 16” will become a rectangle of 16” wide, 8” deep.

Crater/R5: If the shell hits the ground, it will produce a crater of that diameter, in inches, and a depth half that size. For special circumstances, you can apply the “Artillery, special cases” optional rule.

Everything inside that radius from the impact point is destroyed. If you have a crater model, this is the right time to use it. If the shell hits a wall, the effect is the same, but there is no crater.

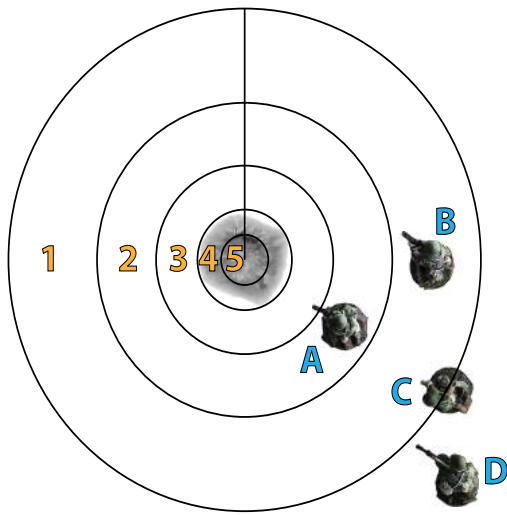
All the figures inside that radius receive damage (determined by using the Combat table) with a heavy modifier.

7,5cm KwK 40 L/48 (SHOTS PER TURN: LOADER QUALITY) (GUN SIGHT: 2)												
		Against Armor					Against Other Targets					
Shell	Type	100m	500m	1000m	1500m	2000m	HE	Crater	R4	R3	R2	R1
PzGr. 39	APCBC	136mm/4D	123mm/4D	109mm/4D	97mm/4D	86mm/4D	1D(4)					
PzGr. 40	APCR	176mm/4D	154mm/4D	130mm/4D	109mm/4D	92mm/4D	1D(4)					
Gr. 38 Hl/B	HEAT	80mm/4D					4D(4)					
SprGr. 34	HE	12mm/8D					8D(5)	D-3(1")	D-1(3")	D(6")	D+1(12")	D+2(19")

A

B

C



- 1 Destruction of floors, ceilings, wooden panels, furniture. Trees lose their leaves.
 - 2 Destruction of the elements mentioned above plus walls (masonry, logs). Trees lose their branches.
 - 3 Destruction of the elements mentioned above plus load bearing walls. Trees lose upper halves.
 - 4 Destruction of the elements mentioned above plus stone and concrete structures. Trees are removed.
 - 5 Destruction of everything inside this radius.
- The figures A and B are affected because they are in rings 2 and 1. Figure C is affected because it's partially inside the ring 1. Figure D is safe.

R4: All the level 4 structures (concrete/stone walls, etc) - or lower - inside that radius from the impact point are destroyed. Replace them with the corresponding rubble. Trees are removed.

All the figures inside that radius receive damage (using the Combat table) with a modifier.

R3: All the level 3 structures (thick brick walls) - or lower - inside that radius from the impact point are destroyed. Replace them with the corresponding rubble. Trees lose leaves, branches and upper halves.

All the figures inside that radius receive damage (determined by using the Combat table) with a modifier.

R2: All the level 2 structures (brick, log walls, sandbags) inside that radius from the impact point are destroyed. Replace them with the corresponding rubble. Trees lose their leaves and branches.

All the figures inside that radius receive damage (using the Combat table) with a modifier.

R1: All the level 1 structures (floors, wooden pannels, mattresses) inside that radius from the impact point are destroyed. Replace them with the corresponding rubble. Trees lose their leaves.

All the figures inside that radius receive damage (using the Combat table) with a modifier.

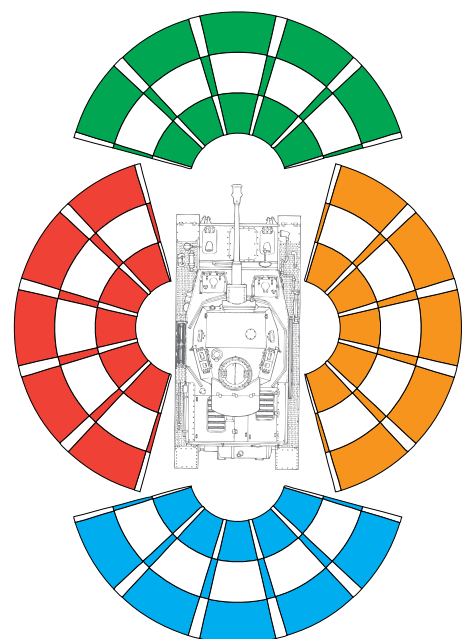
20.1. Additional Effects of Shells on Enclosed Armored Vehicles

Every time an enclosed armored vehicle receives substantial fire (shells capable of penetrating at least half of the relative armor at the impact point) from a different side of the vehicle, the crew becomes confused and shocked.

For this reason, every time one of these vehicles receives this kind of fire, in addition to the normal damage it could deliver, the vehicle will lose one impulse if both of the following conditions are met:

- The shell must be capable of perforating at least half of the relative armor
- This reduction can be applied only once per impulse and "fan".

In the illustration you can see the four "fans".



This effect can render an impenetrable tank entirely useless.

20.1. Ammo loadouts for Tanks and Guns

The loadout depends on the mission and the expected threats the force could find, but a rule of thumb could be that the majority of shells were HE, then AP, then special AP and finally, some smoke shells.

20.1. Artillery, special cases

Some situations require the artillery data to be modified in order to reflect a different behaviour of shells and explosives.

20.1.1. Underwater explosions

When a burst shockwave travels through the air, the atmosphere absorbs part of the energy, lowering the pressure; but water can't compress, so the effects of a shockwave under the surface are much stronger and go over a longer distance. On the other hand, the shrapnell and fragments are stopped by the water resistance in a few yards.

So, if a HE shell explodes under the water, double the distances of the rings 5, 4, 3 and 2.

But it is also important to note that the energy reflects against the seabed. When the depth of the water is big enough (bigger than the "Ring 3" distance in inches), we consider that there is no reflection. However if the depth at the impact point is equal or less than that distance, we consider that part of the shockwave is reflected and increases the damage of the initial shockwave.

So, if a HE shell explodes under the water and the depth of the water at that point is equal or less than the original value of ring 3, double (again) the values of the rings 5, 4 and 3, and double the damage (throwing two dice instead of one per figure).

20.1.2. Snow and sand

Snow and sand are elements that absorb the energy in a very effective way.

So when HE shells explode on snow or sand, the distances of the "Rings" 4, 3 and 2 are halved.

20.1.3. Rocks, cliffs and rocky terrain

When a shell hits a rock, it shatters, sending high velocity shards as shrapnel.

So when HE shells hit a rock, cliff or against rocky terrain, the ring 1 damage increases its lethality by 2 (a 1D-2 becomes 1D-4).

20.1.4. Reinforced concrete (RCx) and Bunkers

Some fortifications are built using reinforced concrete. The reinforcement is usually through steel bars embedded in the concrete. When a shell impacts on reinforced concrete, the energy is dispersed and the damage is quite limited, but on the other hand, the shards produced by the impact are very dangerous for the personnel exposed to them.

So when HE shells explode on reinforced concrete all the damage (even the penetration of anti-tank shells) are divided into the factor expressed in the scenario data. So a wall with a RC4 means that the effects of every impact that hits the wall will be divided by four. But the ring 1 damage increases its lethality for exposed infantry in 2 (a 1D-2 becomes 1D-4).

20.1.5. Cover and proximity fuzes

During the Second World War, most of the shells exploded when they hit the ground, or a few milliseconds later. So the trenches and foxholes provided quite good protection against them.

PZ II C 2cm KwK 30 (SHOTS PER TURN: LOADER QUALITY + 3 [10 rounds each]) (GUN SIGHT: 2)												
		Against Armor					Against Other Targets					
Shell	Type	100m	500m	1000m	1500m	2000m	HE	Crater	R4	R3	R2	R1
PzGr.39	AP	23mm/1D	14mm/1D	8mm/1D	5mm/1D	2mm/1D	1D(2)					
PzGr.	API-T	45mm/1D	33mm/1D	23mm/1D	15mm/1D	11mm/1D	1D(2)					
PzGr. 40	HVAP-T	63mm/1D	26mm/1D	8mm/1D	3mm/1D	1mm/1D	1D(2)					

The Allies developed the proximity fuze, but it was considered so critical that they were never used in situations where they could be captured by the Germans. The first time they were used in Europe was in the Battle of the Bulge (Dec 1944).

These fuzes detonate the shells at a given distance from the target, so the shells could now explode a few meters above the ground, negating the protective effects of trenches.

So, since Sept. 1944 (in the Pacific) and Dec.1944 (in Europe) the cover of trenches and foxholes can't be used against US Artillery shells (75mm or bigger).

20.1.6. Autocannons against infantry

In some cases, autocannons may be used to engage infantry in a similar way to HMGs. All of them are considered to have a penetration of six and a React of four, but they can't roll more dice than the number of rounds per magazine. Their damage modifier is -4 and they are immune to the double six roll.

Keep in mind that due to the "Shots per Turn" feature, a vehicle mounting an autocannon may fire more than one magazine per impulse. In the case of the 2cm KwK 30 we show below, if the loader has a Quality of three, the vehicle could fire up to six magazines in one turn (two the first and second impulses, and one in the third and fourth).

20.1.7. White Phosphorus

White Phosphorus shells were designed for use as artillery markers to help with targeting or to create instant smoke screens. But in some cases (as with the M4 armed with the 75mm gun or the 105mm M4 howitzer), it was used to blind and disable German tanks from August-1944 on), or to clean enemy positions using 81mm mortars.

White Phosphorus fires can not be extinguished.

20.1.7.1. Effects of White Phosphorus on troops

Any figure (including exposed crews) inside the radius of impact given in the "Damage" column listed in the following table, will roll for damages. The Cover works as usual in this case, but it is calculated from the impact point.

White Phosphorus keeps burning (and generating smoke) for some time, so after the impact, the players must roll a die for every WP fire, an even result means the fire is stopped.

The smoke produced by WP tends to rise, so it only can be used as a screen as long as the phosphorus is alive.

WHITE PHOSPHORUS	
Weapon	Damage
Hand Grenade	D-2(1")
50mm Mortar Shell	D-2(1")
75mm Gun Shell	D-2(5")
81mm Mortar Shell	D-2(6")
105mm Howitzzer Shell	D-2(8")
120mm Mortar Shell	D-2(10")

20.1.7.2. Effects of White Phosphorus on armored vehicles

The only effect of White Phosphorus, when used against armored vehicles, is that it sticks to the tank, blinding the crew.

Enclosed vehicles must close the hatches and are unable to fire while the phosphorus is alive (because the crew must switch off the ventilators that prevent poisonous propellant gases from venting back into the vehicle's fighting compartment when the gun breech is opened to load another round).

20.1.7.3. Effects of White Phosphorus on unarmored vehicles

A vehicle directly hit by a WP weapon will need to check for fire using the lowest Fuel value found in its Data Card and will apply the Fire Modifier. The WP phosphorus will stick to the vehicle.

A vehicle inside the Damage radius of the WP impact point will check for fire using the highest Fuel value found in its Data Card. The Fire Modifier will not be applied.



21. GRENADES

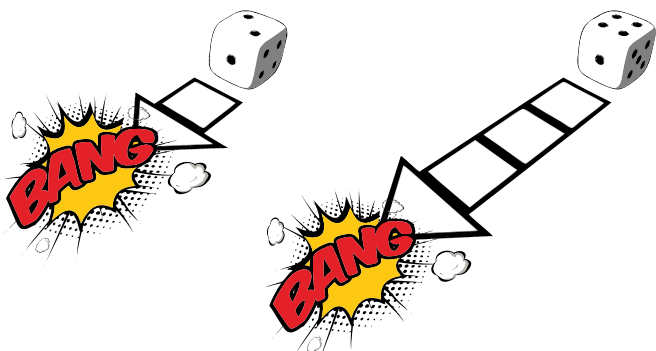
21.1. Hand Grenades

The grenades (and other throwing weapons like Molotov Cocktails, o Satchel Charges) are special weapons and have their own procedure to determine if they hit the intended target and where they eventually land. When it comes to throwing them, they are treated in the same way, which is explained in this chapter.

Individual members of the leading assault groups were advised to creep up through shellholes and ruins, sometimes on all four, with submachineguns and up to a dozen grenades. One or more of these was generally used during the advance to contact, and indeed the length of the grenade-throw often predetermined the distance of the final attack. This would become the Chuikov's so-called "hand grenade rule", a frequently cited tactical maxim from the Stalingrad battle; not to move without throwing a grenade first, and no move no further in one bound than a grenade could be thrown. Stephen Bull, World War II Street-Fighting Tactics, S, p.18

21.2. Throwing a hand grenade

The player marks the point where he wants to throw the grenade and rolls a die to determine where it lands. The distance is given by the value of the die (added to the modifiers, if any), and the angle, by the number on the visible with the lowest value.



In the examples, the grenade lands two and four inches away from the intended point, in the direction pointed by the face with the lowest value (in this case, one).



Some situations may affect the dispersion distance of the throwing, so we have some modifiers.

GRENADE LAUNCHING MODIFIERS TO THE DISPERSION DISTANCE	
Situation	Modifier
Quality of launcher	- Quality
Shoot through ceiling/wall/door	+1"
The target is in a trench/foxhole	+1"
Throwing in reaction	+1"
The launcher is on a vehicle/moving boat	+1"
The launcher is running	+½D"
The launcher ran in the previous action	+1"
The launcher is in prone position	+1"
The launcher can't see the target	+½D"
The launcher is behind cover	+½D"
+½D" means that a die must be rolled and the result, halved (rounded down) added to the distance.	

If the grenade (or the object thrown) has to go through an opening in its path (door, window, loop-hole), a die must be rolled to know if the thrower fails and the grenade bounces against the wall

where the opening is. In this case, the player rolls the die to determine where the grenade lands, marking as "target" point the one directly under the opening.

THROWING A HAND GRENADE	
The hand grenade must pass...	Success
Through a door at less than 6"	1,2 3 or 4
Through a door at 6" or more	1, 2 or 3
Through a window at less than 6"	1, 2 or 3
Through a window at 6" or more	1 or 2
If the launcher is moving when throwing	+1

The effects of the hand grenades affect every figure in the blast area, using the combat table.

The Combat Modifiers are the same used in infantry combat.

HAND GRENADES									
Country	Weapon	Range	Armor	HE	Crater/R5	R4	R3	R2	R1
SU	F1	13"							1D(2")
SU	RGD-33	15"							1D(2")
SU	RPG-40	8"	20mm/3D	4D(5)	1D-3(2")	1D-1(3")	1D(4")	1D+1(8")	1D+2(15")
SU	RPG-43	12"	70mm/3D						1D+2(2")
SU	RPG-6	12"	100mm/3D	4D(5)	1D-3(2")	1D-1(3")	1D(4")	1D+1(8")	
GE	Eihandgranate M-39	10"							1D(2")
GE	Haftohlladung H3	0"	140mm/12D	6D(5)	1D-3(3")	1D-1(4")	1D(6")	1D+1(15")	
GE	Panzerwurfmine	8"	75mm/3D						1D+2(2")
GE	Stielhandgranate M-24	19"							1D+1(2")
GE	Stielhandgranate M-43	19"							1D+1(2")
GE	Geballte Ladung (seven M-24)	8"	10mm/2D	4D(2)				1D(2")	1D+1(3")
JA	Type 3 Ko HEAT	9"	70mm//7D	5D(5)	1D-3(2")	1D-1(3")	1D(5")	1D+1(10")	
JA	Type 3 Otsu HEAT	11"	70mm/4D	4D(5)	1D-3(2")	1D-1(3")	1D(4")	1D+1(8")	
JA	Type 3 Hei HEAT	11"	70mm/3D	4D(5)	1D-3(2")	1D-1(3")	1D(4")	1D+1(8")	
JA	Type 91	10"							1D+2(2")
JA	Type 97	10"							1D+1(2")
JA	Type 98 Stick	15"							1D(2")
UK	Mk1 Mills	10"							1D(2")
UK	No.73 AT Thermos	6"	50mm/3D	5D(5)	1D-3(2")	1D-1(4")	1D(5")	1D+1(13")	
UK	No. 74 AT Sticky Bomb	10"		3D(5)	1D-3(1")	1D-1(2")	1D(3")	1D+1(6")	
UK	No. 75 AT Hawkins	10"		3D(5)	1D-3(1")	1D-1(2")	1D(3")	1D+1(6")	
UK	No. 82 Gammon Bomb	10"		4D(5)	1D-3(2")	1D-1(3")	1D(4")	1D+1(8")	
US	Mk 2 Pineapple	10"							1D(2")

21.3. Cooking a Grenade (Optional)

A figure can choose to release the safety spoon before throwing the grenade. This allows the fuse to burn a few seconds before throwing it, thereby allowing a shorter time to detonate when it lands near the enemy. But, of course, the capability of a fighter to count mentally under combat conditions could lead to a lethal mistake, so when a figure chooses to cook a grenade, the player must roll a die against its Quality. If the result is equal or bigger than its Quality, the hand grenade explodes in its hands.

This is an extremely dangerous practice and most of the times ends badly.



Throwing a Panzerwurfmine

21.4. Throwing back a hand grenade

A player can try to throw back a hand grenade, but only if it wasn't cooked.

The hand grenade must be close enough (1") and the player rolls a die; one or two means success, so the grenade is removed from the table (it explodes somewhere).

21.5. Distribution of explosion damage

When an artifact explodes, it affects every figure inside the explosion radius specified in the weapon data.

Please note that some anti tank grenades have a blast area bigger than the throwing range. This means that the thrower should keep at least one action to get cover (preferably in a shellhole) before the grenade explodes.

21.6. Effects of the explosions in the reaction capability

Additionally, an explosion causes a shock status to every figure present in the area (the explosion radius if outdoors, double the radius if indoors) so all of them (even if they were not affected by the explosion) lose one action and try to Hunker Down if they are close (less than 2") to a wall, rock or hole, if there is no cover close by, they will get stunned.

21.7. Rifle grenades

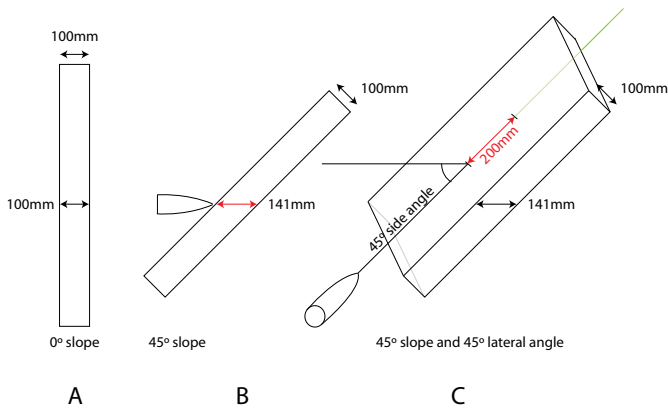
Rifle grenades work exactly the same as the normal ones, the only difference is that they are launched from a rifle (so they sound like a shot) and the range is much bigger.

RIFLE GRENADES									
Country	Weapon	Range	Armor	HE	Crater/R5	R4	R3	R2	R1
GE	Gewehrpanzergranate 30	45"	20mm/1D						1D+2(2")
GE	Gewehrpanzergranate 42 (1)	45"	70mm/1D						1D+1(2")
GE	Gewehrpanzergranate 46	45"	90mm/1D						1D+1(2")
JA	Type 91	45"							1D+2(2")
UK	No.68 HEAT	45"	50mm/1D						1D(2")
US	M9A1 HEAT (2)	45"	50mm/1D						1D(2")

(1) There were other kinds of grenades; blinding (Gewehrblendgranate 42), smoke (Gewehrnebelgranate 42), flare (Gewehrfallschirmleuchtgranate) and for sending messages (Gewehrpropagandagranate).

(2) There were also a version with a parachute supported flare, and the M22 (coloured smoke)





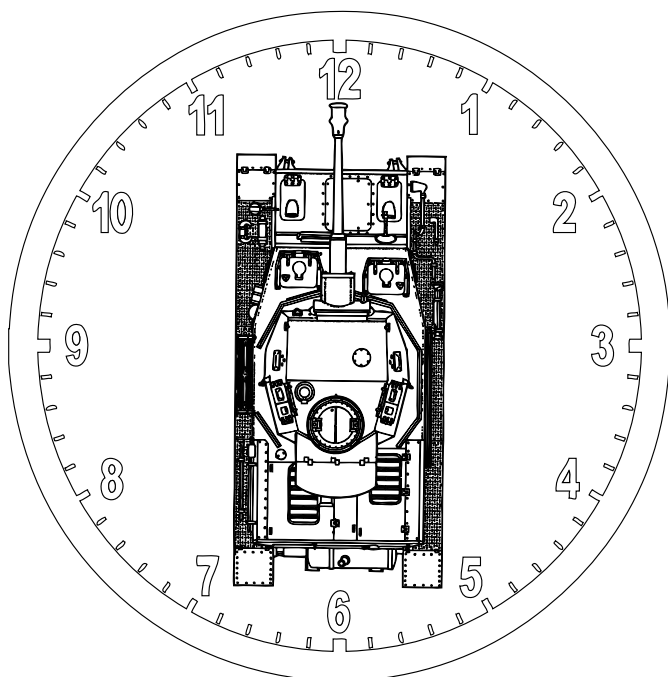
So, for example, when a shell impacts an armor plate with a thickness of 100mm with a slope of 0 degrees, it has to pierce only 100mm to reach the other side (case A in the diagram above).

If the same plate is sloped 45 degrees (case B), now, the same shell will be able to pierce 141mm.

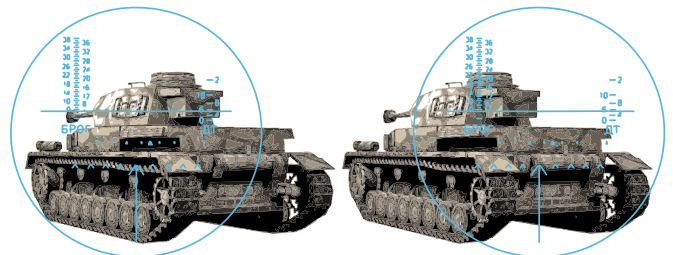
However, if we shot the same shell, against the plate sloped 45 degrees, from one side (another 45 degrees), now it will go through 200mm of armor. This is called "Relative Armor".

22.1.2. Angle of the shot

In order to make the game accurate but simple, we divided the circle (the target being the center) into 12 equal sectors, following the 12 hours convention.



Obviously, from some angles (or sectors), the attacker may choose to shoot two different sides of the tank, because from some points of view, both one side and the front - or rear - part of a vehicle can be seen at the same time.



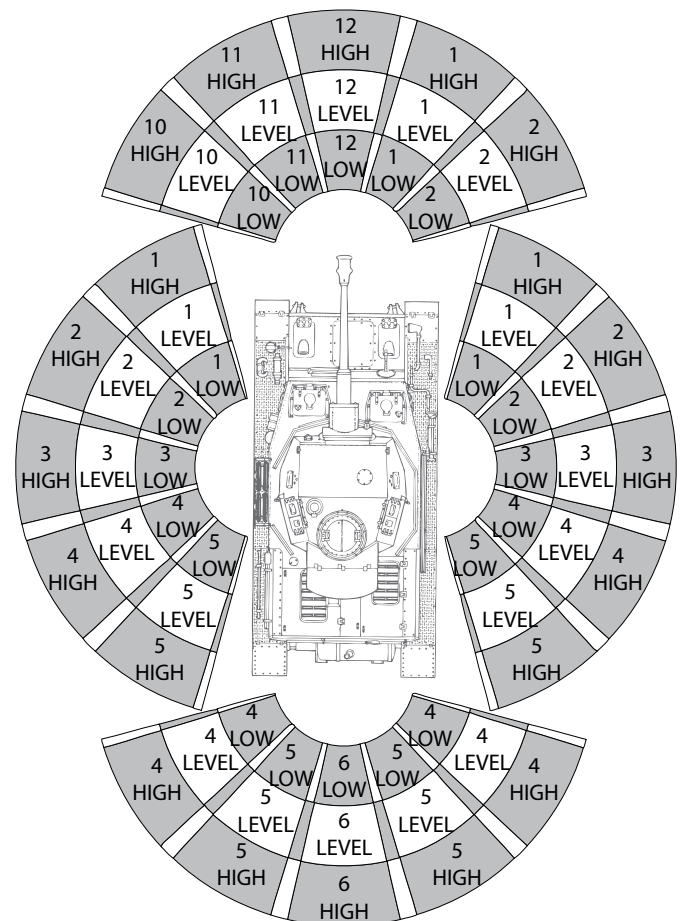
Shot to the **SIDE** from SECTOR 7

Shot to the **BACK** from SECTOR 7

In fact, the only angle at which this is not possible is when the weapon is exactly at 12, 3, 6 and 9. So we duplicate those sectors where the enemy gunner can choose between two different areas.

This is why we have four "fans" around the vehicles, to allow the attacker to choose where to place the shell when the vehicle is angled and he can aim to hit one of the sides or the front (or the rear) of the target.

Now we should know why we have three cells in every sector named "High", "Level" and "low".



22.1.3. Height of the shot

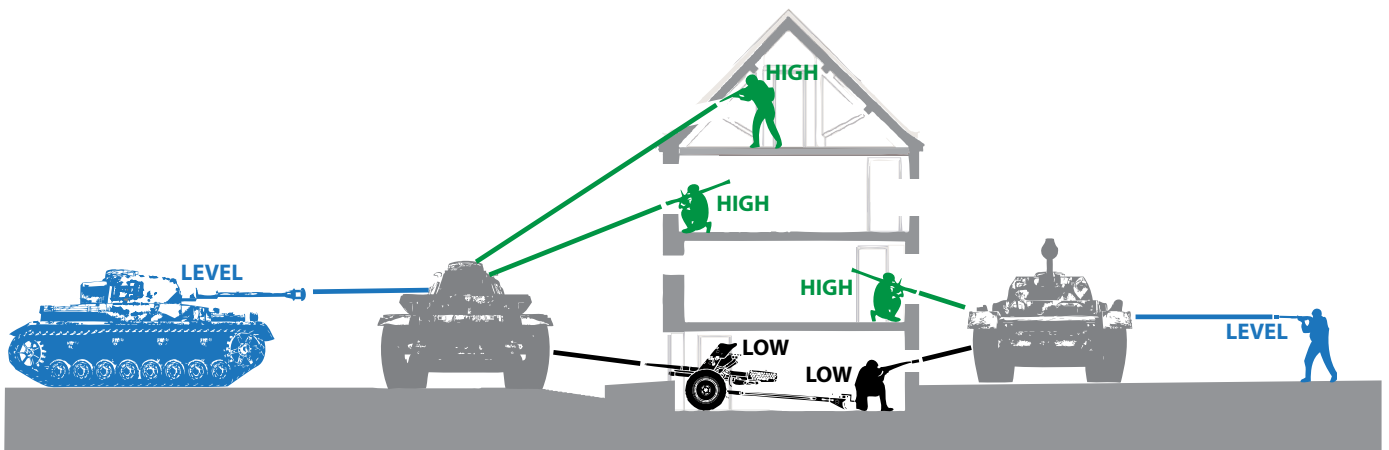
When a figure, support weapon or vehicle shoots against a target, there are three basic heights of fire, depending on the relative height between shooter and target. Basically, if the barrel (or equivalent) is parallel to the ground, the shot is "level"; if the barrel points downwards, it's "high" and if the barrel points upwards, it's "low".

When we combine both concepts (12 sectors, some of them duplicated) and the three different heights, we get the following fire diagram. In every cell of these four "fans", you will see some numbers. The black or red numbers tell us the relative thickness of the armour when a shell strikes at this point. If the number is red, this means that there is a chance of rebound. The black numbers you will see in front of the bow, behind the rear and on top of the turret

indicate the relative armor on the horizontal surfaces of the vehicle. In the case of a tank, over the driver, over the rear back deck and on the roof of the turret, respectively.

In vehicles with turning turrets, the turret has its own diagram. Due to the fact that the chance of shooting the turret from a lower position is really low, we removed the "Low" row. We didn't duplicate some sectors for practical purposes; the chances of rebound were too high.

You will also see other blue or green numbers in the cells of the diagram fans. Don't worry; these are simply the "Size" of the vehicle (or turret) viewed from these relative positions of fire. The blue ones can be used in the Low and Level rows, and the green ones when you fire from a High position.





23. THE DATA CARD IN DETAIL

23.1. The Data Card Explained

In this subchapter you will learn everything you need to know to use Data Cards.

23.1.1. Basic information

Following the name of the vehicle, you will here find the information regarding speeds (on and off road), if a vehicle can tow or not and, in the case of tracked vehicles, if they can pivot, etc. Guns have far more information here, like the number of actions needed to limber/unlimber the piece, the actions needed to turn or move it, the number of shells per crate, and the actions needed to move the crates.

23.1.2. Weight

The weight is useful to know if a vehicle can cross a bridge or not, or if it can be towed or loaded onto a landing craft.

23.1.3. Ground Pressure

Every land vehicle has a Ground Pressure value in its Data Card. This is the pressure it exerts against the ground. When the ground can not bear such pressure, the vehicle may reduce its speed, or in an extreme situation, it may bog down in the soft terrain. Normal values for tanks could be 0.7 for a T-34 up to 1 for a Tiger. The ground bearing pressure depends on many factors, but we will use this simple table:

GROUND BEARING PRESSURE	
Terrain type	GBP
Cemented Sand, gravel	0.7
Plowed or loose soil	0.6
Coarse gravel	0,5
Coarse sand, Snow	0,3
Silt	0,2
Clay	0,1

When a vehicle enters soft terrain, the Quality of the driver is as important as the Ground Pressure (or GP) of the vehicle. In fact, we reduce the GP of the vehicle in 0.1 per Quality point of the driver, so a Tiger with a Quality four driver will behave like a tank with a GP of 0.6 (1 - 0.4).



















But even so, when this vehicle is moving over terrain with a Ground Bearing Pressure (or GBP) lower than the Effective GP (the GP of the vehicle modified by the Quality of the driver, or EGP), the player must face the consequences, and the severity of these consequences depends on the difference between the Ground Bearing Pressure and the Effective Ground Pressure.

CONSEQUENCES OF MOVING ON SOFT TERRAIN	
EGP - GBP	Effect
0.1	Speed -1
0.2	Speed -2
0.3	Speed -3
0.4	Speed -4
0.5	Vehicle Stopped
0.6	Vehicle Bugged Down

The player can try to avoid the consequences rolling a die against the Quality of the driver. If the Quality check is passed, the effect is ignored. If it fails, the player must apply the next effect (as if the difference was increased by one).

23.1.4. Symbols

The Damage Points (or DP) from shells will produce effects on the target, but before Dealing with this we should take a look at how the vehicle equipment is represented on the card. We use "Icons" for this purpose.

	Gun	
	Ammunition	
	Radio	
	Engine	
	Tracks, etc	
	Fuel	
	Visor	
	Turret Ring	
	Structural Integrity	
	Propeller	
	Buoyancy	

In group A we have the basic information about the vehicle; Name, speed, and turning characteristics. Any special feature will be noted here (especially in the case of guns). For example, if the vehicle has been equipped to work as an artillery forward observer, or if it may tow a gun.

B groups tell us how many "hits" the equipment or systems of the tank will endure before being destroyed, how the fuel and ammo behave when hit, etc.

"d" Is the arc that tells us how many degrees the turret can turn in an impulse (an impulse is one of the four periods of time in which we divide the turn for all the elements defined in Data Cards).

Group C tell us the weight of the vehicle (for barges, pontoons and bridges) and the Ground Pressure (to handle situations when snow, mud or soft terrain are involved). For boats and amphibious vehicles, the draft of the hull.

D Points to the systems (and crew members) that can be affected when a shell hits the vehicle from that sector. Symbols inside a hexagon identify crew members or passengers. When the symbols are on the internal side of the "fan", this means they are affected by any hit from any of the individual "fan sectors".

Groups E are the main diagrams of the card. They define the vehicle as a target. The black numbers show the relative armor thickness when hit from that angle and height, and the blue and green numbers tell us the size of the vehicle from that sector. The turret diagram is a simplified version, and it lacks the "low" row.

F is the square that controls the fires (if any) and any modifier applicable in that case (as the PzKpfw IV used gasoline, it adds +1 to the fires).

Group G shows the information regarding the gun sight and the number of times it can shoot in a turn.

Group H tell us everything the player needs to know about the ammunition it fires.

Group I is the key to know what the crew sees when the vehicle is buttoned-up. This information is used to spot the enemy.

A PzKpfw IV Ausf F2
Can't pivot. Speed: 10" or 21" (road) per impulse, 90 rounds

C ^{VO} Tons 22
G Pressure 0.8

B

D

E

F +1 Fire

G

Open Hatch

Cmdr

Loader

Gunner MG34 D-1(P3R8)

Driver

Radio MG34 D-1(P3R8)

7,5cm KwK 40 L/48 (SHOTS PER TURN: LOADER QUALITY) (GUN SIGHT: 2)												
Shell	Type	Against Armor					Against Other Targets					
		100m	500m	1000m	1500m	2000m	HE	Crater	R4	R3	R2	R1
PzGr. 39	APCBC	136mm/4D	123mm/4D	109mm/4D	97mm/4D	86mm/4D	10(4)					
PzGr. 40	APCR	176mm/4D	154mm/4D	130mm/4D	109mm/4D	92mm/4D	10(4)					
Gr. 38 Hl/B	HEAT	80mm/4D					4D(4)					
SprGr. 34	HE	12mm/8D					8D(5)	D-3(1')	D-1(3')	D(6')	D+1(12')	D+2(19')

In group J we see how many people man the vehicle and their mission (and the weapons they fire, if any). The commander can be put in his normal position (white) when the tank is buttoned-up, or on the green square if he opened the hatch. There is enough space to put the figures on the Data Card while the crew is inside or aboard the vehicle.

“Icons” identify crew members, pieces of equipment or systems that can be damaged when a projectile hits from that fire sector. Crew member icons are identified by a hexagon. Icons can be on the interior side of the “Sector Fan”, or on the exterior.

There are some conventions regarding the position of icons:

- When an Icon is on the interior side, it means that that crew member, system or equipment may be affected when any of the fan sectors is hit.
- When an Icon is on the exterior side, it means that that crew member, system or equipment can be affected only when that sector is hit.
- When - in the case of turrets - there is a dotted line covering several adjacent sectors and one or more icons beside that line, this means that those icons can be affected from any of the sectors covered by the line.
- When there is no representation of an icon in the diagram, this means that this equipment or crew member can be affected from any sector.

For example, in many tanks the “Turret Ring” equipment is not represented in the Turret diagram, because in these tanks, this equipment may be hit from any angle.

23.1.5. Vehicle machine guns

This is the only system that is not represented by an icon. Machine guns can only receive damage due to close quarter fight by enemy infantry. This simulates the fact of an enemy infantryman beating the tank weapon trying to bend the barrel or any other measure to render the machine gun unserviceable.

23.1.6. Repairs

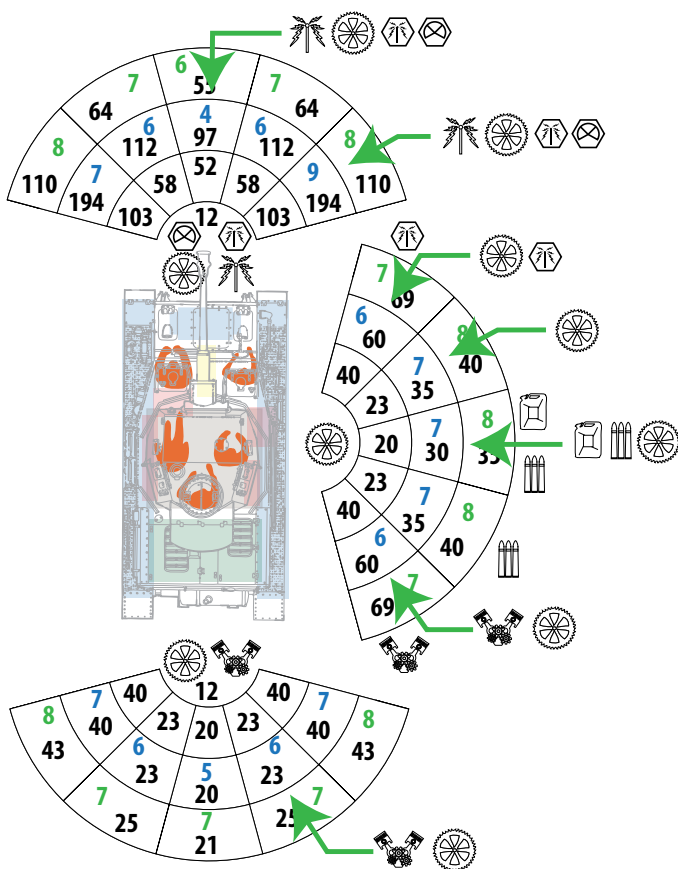
Only systems not destroyed can be repaired, and some systems can not be repaired at all.

The repair time is measured in Actions. Many crew members can use their actions to repair a system sooner. Keep in mind that some repairs must be done from the exterior of the tank (propellers, tracks, and wheels).

23.1.7. Main Diagrams

Most of the time - when it comes to tanks - we have a set of diagrams to show the Relative Armor, Size and Damages for the hull, and another one for the turret.

When a projectile hits the vehicle, it enters through one sector and can affect any crew member, system or equipment identified by the icons attached to that sector. Using this system, what we get when a shell hits the tank, is a basic “list” of systems and crew members that could be affected by that projectile. Later on, we will reorganize it, and include another crew member if necessary.















The way the damage is applied to the vehicle depends on the nature of the system affected (as we will see now), and the type of projectile used (as we will see straight afterwards).

Some systems like the tracks or the engine will take as many Damage Points (or DP) as the number shown in the Data Card beside the icon. These used up DP are subtracted from the tally, greatly reducing the potential further damage of the projectile.

Other systems, like the fuel or the ammo, will trigger a “fire or explosion check”. Independently of the result of the check, this reduces by one the DP tally.

VEHICLE SYMBOLS

System	Type	How it Takes DP	Repairs	Consequences
	Check	Takes 1 DP	NO	CREW MEMBER. Roll on the Combat Table (with the corresponding shell modifier)
	Takes damage	As many as possible	NO	GUN. Every DP (Damage Point) reduces by one the GUN SIGHT modifier
	Check	Takes 1 DP	NO	AMMUNITION. Roll a die, if the result is equal or bigger than the number in the card, the propellant explodes and the vehicle is destroyed
	Takes damage	As many as possible	1 Action per DP	RADIO. Out of order until repaired. One crew member must use one action to fix the radio. But this can be done only once per vehicle.
	Takes damage		1 Die roll Actions per DP	ENGINE. Every DP reduces the speed (and the bilge pumps, in boats) proportionally
	Takes damage	As many as possible	TRACKS: 1 Action per Ton WHEELS: 2 Actions per Ton	TRACKS, WHEELS. In the case of tracks, only one of them can take damage from the same projectile. In other words, a shell hitting the right side will affect the right track, but never the left one
	Check	Takes 1 DP	The crew can try to fight the fire. See "30.1.2. Putting out fires (Optional)" on page 131	FUEL. Roll a die, if the result is equal or bigger than the number in the card, roll again to find the intensity of the fire. Add or subtract the "Fire Modifier" of the tank. However, a die roll of six, always means the fire is out of control
	Takes damage	Takes 1 DP	1 Action per DP	Every DP reduces by one the SPOTTING from that sector. This can be repaired if one crew member uses one action to replace the vision block by a new one
	Takes damage	As many as possible	1 Die roll Actions per DP	One DP, turn speed halved Two DP, turret stuck
	Takes damage	As many as possible	NO	STRUCTURE or AIRFRAME. Accumulative, not repairable. Every hit increases the turning radius for boats by 10", and for aircraft by 1".
	Takes damage	As many as possible	1 Action per Ton	PROPELLER. Every N DP the speed is reduced by half
	Takes damage	As many as possible	1 Action per DP	BUOYANCY. Every DP means a hole in the hull below the waterline that allows water to enter the boat. One crew member needs one action to plug a hole or to dewater one DP. A working engine will dewater as many Buoyancy DP it has. With every Impulse, the boat will lose the same amount of new DP

Hits on crew trigger a check in the Combat Table.

23.1.8. Effects of shells

The nature of the projectile also greatly affects the damage produced inside the vehicle. Armor piercing or solid shots have no explosive charge and may injure or kill people, but much less than shells loaded with an explosive that could explode inside the vehicle.

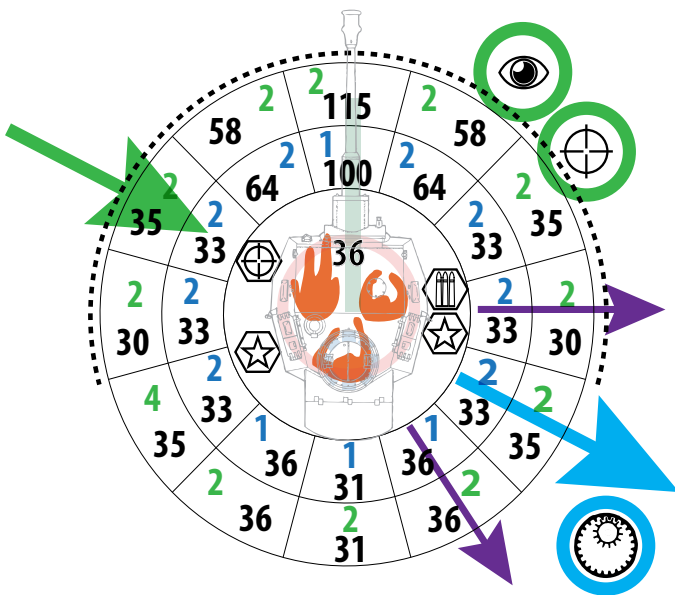
For this reason, we use a table to specify in which order we will apply the damages.

EFFECTS OF SHELLS		
Type of Shell	Odd Damage	Even Damage
HE	Crew(D)	System
APHE	System	Crew (D)
APHEBC	System	Crew (D)
HEAT	System	Crew(D-1)
APC	System	Crew (D+1)
APCR	System	Crew (D+1)
APCBC	System	Crew (D+1)
Incendiary (-I)	Additional FIRE with a die roll of 5	
Tracers (-T)	Additional FIRE with a die roll of 6	

For example, if we are hit with an APC shell, the first damage should affect a system, the second one, one crew member, then another system, another crew member, etc until the tally reaches zero.

23.1.9. Damage Propagation Rule

However, sometimes the effects of a projectile exceed the maximum damage assigned to the crew and systems assigned to the fan sector. When this happens, we consider the projectile keeps moving forward, affecting the systems of the opposite sector. If the effects continue to exceed the damage assigned to that new sector on the opposite side, those adjacent to it will also be affected.



In this example, the projectile hits at the sector marked by the green arrow, so it may affect the equipments "Visor" and "Gun" (because both are in the dotted line). If the projectile keeps moving for-

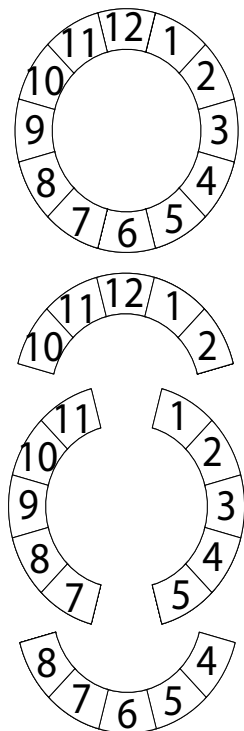
ward, it will damage the equipment on the opposite side (here the "Turret Ring", because if the icon is not represented, this means that it can be damaged from any sector). If the projectile continues to damage even more equipment, then those attached to the sectors marked by the purple arrows will also be affected. Here, the "Visor" and the "Gun" may be affected again.

In short, this is where we apply the "Damage Propagation Rule", assuming that the projectile hits the tank, damaging whatever is in the sector, and then keeps moving through, affecting crew members, equipment, and systems it finds along its path. For convenience, we use the 12 hours system to identify the sectors in both diagrams, the circular of the turret, and the "fan sectors" of the hull.

23.1.10. Excess Damage Points

If after the Damage Propagation Rule is applied, there are still DP to be spent, they are lost.

DAMAGE PROPAGATION	
Entry sector	Exit sectors
12	6 then 7 and 5
1	7 then 6 and 8
2	8 then 7 and 9
3	9 then 8 and 10
4	10 then 9 and 11
5	11 then 10 and 12
6	12 then 11 and 1
7	1 then 12 and 2
8	2 then 1 and 3
9	3 then 2 and 4
10	4, then 3 and 5
11	5 then 4 and 6



The 12 hours system and the table to help to identify entry/exit sectors.

23.1.11. Fire control

Every time a damage affects the Fuel, the player must roll a die to know if a fire starts.

If the result is equal or greater than the number stated beside the Fuel Symbol of the Data Card, a fire starts, with the intensity given by the die.

A die roll of six always means that the fire is out of control.

The value showed in this part of the Data Card is a modifier for that die roll. Simply add or subtract that value from the die roll result. From the moment there is an active fire in a vehicle, every new turn a die is rolled again, and again the same modifier is used. If the result is bigger than the actual intensity of the fire, the intensity is increased by one. If the result is smaller, the intensity is reduced by one.

If another Damage Point is applied to the Fuel - because other Fuel is affected, or because another shell hits the vehicle, the player must roll a die - with the modifier - and in this case, if the result is bigger than the current intensity of the fire, This will replace the previous value. If the die roll is smaller, it is ignored. When the intensity of a fire reaches six, the fire is out of control, and every figure inside the vehicle must try to get out of it.

If a figure stays in a vehicle on fire, it must check for fire damage once per impulse.

FIRE DAMAGE	
Roll	Means
1	Dead
2	Dead
3	Dead
4	Dead
5	Hunker Down
6	No effect

Sometimes, the crew or passengers can try to put out a fire. The procedure is explained in “30.1.2. Putting out fires (Optional)” on page 131.

23.1.12. Gun Data

The Gun Data table gives us the information needed to know how many times the gun fires per turn, and the effect of the gun sight when the gun fires.

As this information was explained in “20.1.1. Gun Information” on page 88, we will simply remind here the very basic concepts.

22.1.12.1. Shots per Turn

The number of shots a gun can shoot in a turn depends greatly on the Loader Quality. It is explained in “20.1.1.1. Shots per Turn” on page 88.

22.1.12.2. Gun Sight

The Gun Sight (as explained in “20.1.1.2. Gun Sight” on page 88) is one of the modifiers that increase the chance to inflict greater damage to the target.

23.1.13. Ammunition

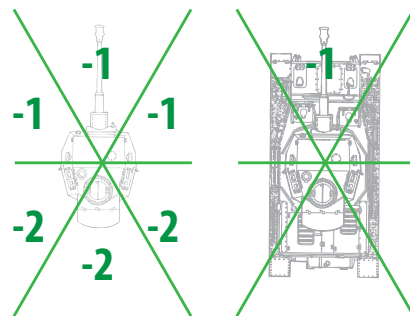
Every shell has its own characteristics, and here you can check and compare how they behave when facing different kind of targets. The explanation about the data you find here is in “20.1.2. Shell Information” on page 88.

23.1.14. Vision blocks

These are the diagrams to be used when the crew must try to spot an enemy but the vehicle is buttoned-up. This information is used as “Sight Modifier” to spot the enemy, as explained in “2.4. Spotting” on page 18.

A value in a sector means that the vehicle can try to spot from that sector, using the value shown there as “Sight Modifier”.

If there is no value in that sector, this means that the vehicle can not try to spot from that sector.



23.1.15. Crew

Here we see how many people man the vehicle and their mission (and the weapons they fire, if any). We have reserved some space to let the figures on the card leave the vehicle and appear on the table, should they need to do so. The commander could be put in his normal position (white) when the tank is buttoned-up, or on the green square if he opened the hatch.

24. THE PROTACTOR

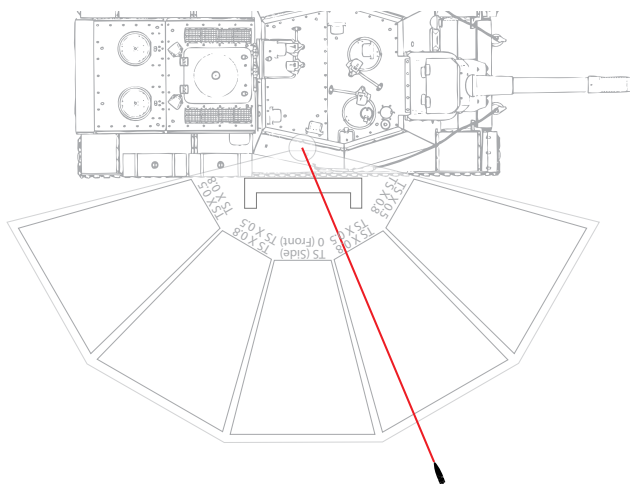
24.1. The Protactor

The protactor is the tool we use to determine how a projectile hits a vehicle, but it also helps you to know the relative speed of that vehicle, and even the turning radius of cars, trucks, halftracks and armored cars, boats and planes.

You can use the template we include in this set of rules, to make it with cardboard. Or you can 3D print it using the STL file you were given. In any case, before you use the protactor the first time, you need to assemble it. Simply put a thread through the small hole you will find in the protactor and secure it. This thread will represent the shell path when a gun shoots against a vehicle.

24.1.1. The Protactor and the Firing

The base of the protactor has been designed to be put against the side, front or back of any vehicle. Just put it parallel to the side, front or back of the target and align the thread with the gun of the attacker.

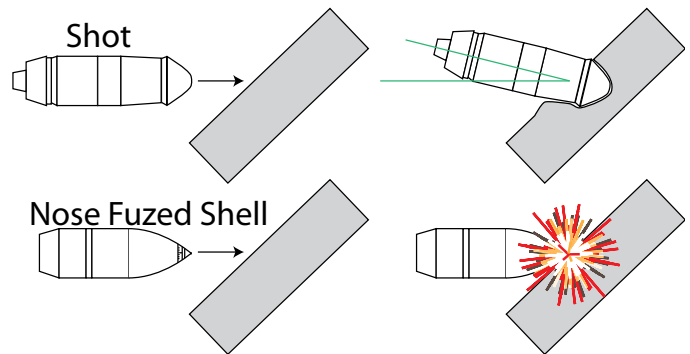


So it should look like this.

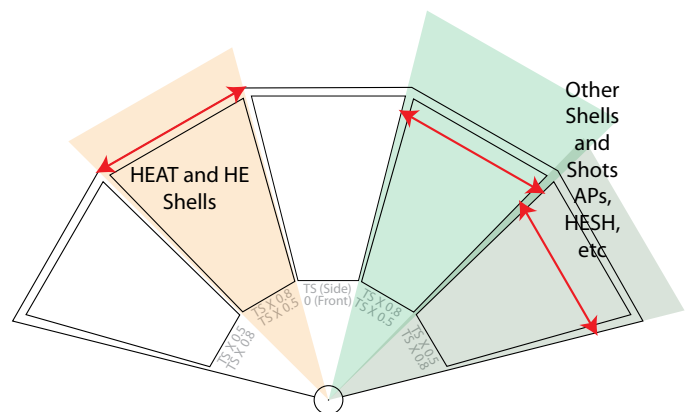


In this way, we can know which “fan sector” is hit by the shell. However not all the shells behave in the same way when they strike against the target.

Usually, shells with nose fuzes explode on impact, but inert shots, or shells with bottom fuzes, can deform the armor plate, and change slightly the projectile angle of attack.



To reflect in some way this effect, when we use the protactor to find where a HE or HEAT shell hits the target, the thread must be exactly between corners of the “fan sector” (in the illustration, the orange triangle). However, in the case of any other kind of projectiles, we allow the “fan sectors” to overlap (in the illustration, any of the green triangles). In these cases, the shell hits always in the sector chosen by the attacker.



24.1.2. The Protactor and the Relative Speed

The protactor helps us to calculate the “relative speed” of the target. This is critical when the attacker is using an artillery sight, because if the target moves too fast, it may be unable to keep the visor on it.

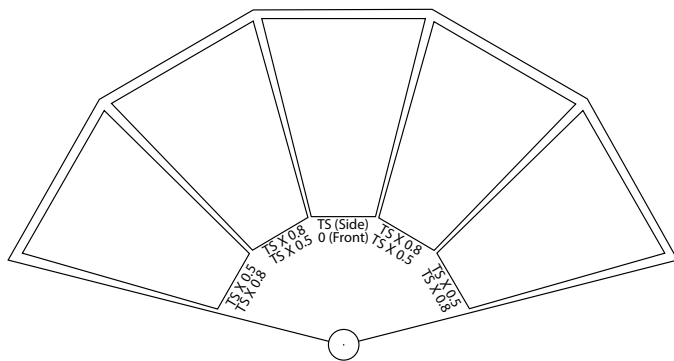
The Relative Speed is one of the modifiers that affects the shot when using a standard artillery sight, as mounted in guns and tanks.



This never happens when the attacker is using an AA sight, because these sights allowed the gunner to see a much bigger area, and to calculate the speed in a much more intuitive way. Also, it is important to note that the training of AA gunners was focused on tracking very fast targets.

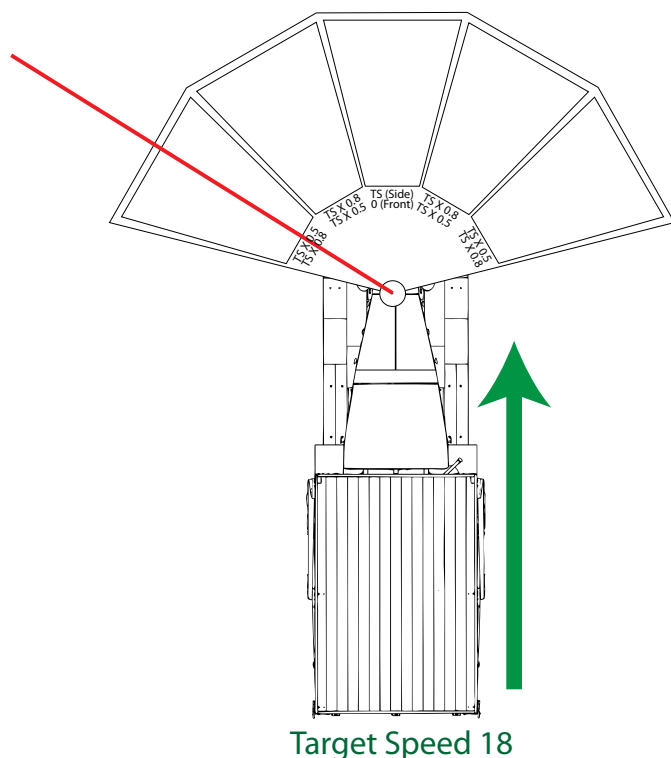


As you can see, in every “fan sector” we have enough data to calculate the relative speed of the target (or Target Speed), mainly for cars, motorbikes or even aircraft.

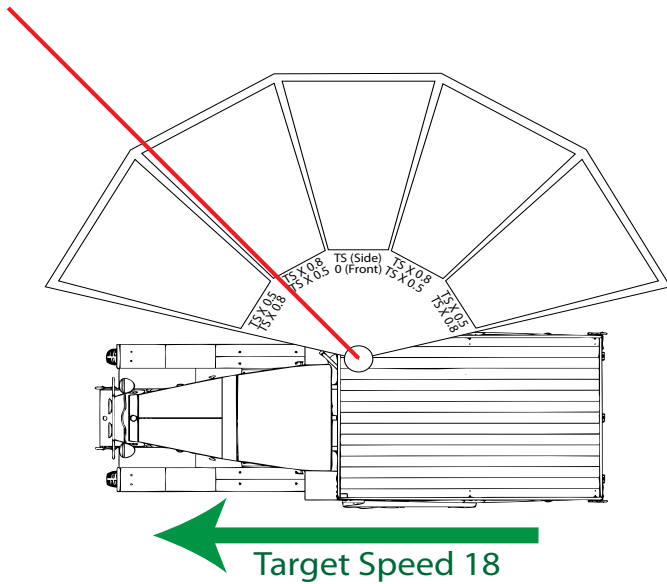


At the same time you find the “fan sector” where the projectile will hit the target, you can calculate the relative speed of the target. Simply multiply the actual speed of the target by the factor written in the corresponding “fan sector”. The “Target Speed” is one of the data involved in the shooting procedure.

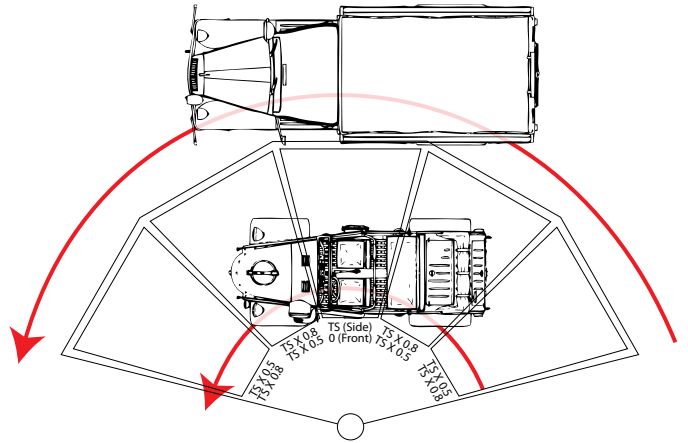
For example; if a Gaz AA is moving at a speed of 18, and we are trying to hit from the sector indicated by the red line (the thread), we see that the relative speed will be the actual Target Speed (18 in our case) multiplied by 0.8, so it will be fourteen ($18 \times 0.8 = 14.4$).



And the same applies if the target is moving across our line of sight. In this case, the same truck is moving at the same speed as before, 18. Now, the thread tell us that the relative speed of the target will be nine ($18 \times 0.5 = 9$).



Every 30° turn uses up two inches of the movement allowance.



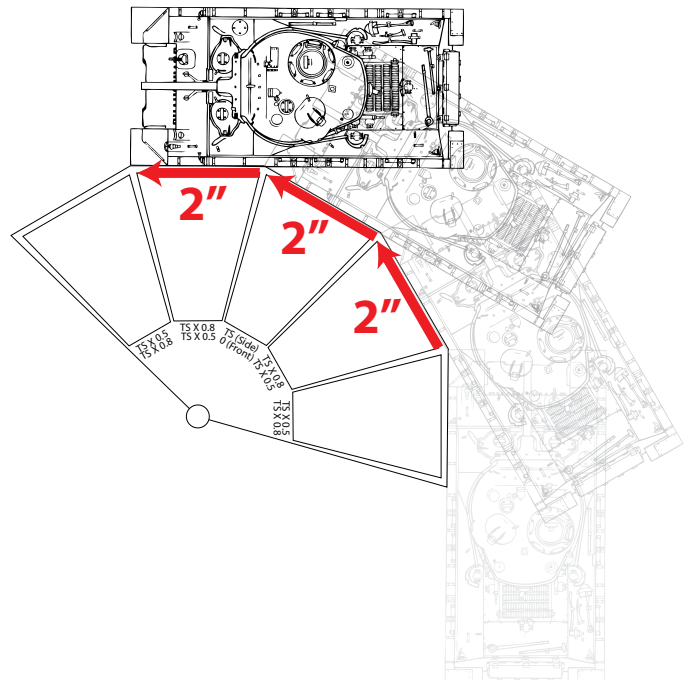
Simply keep in mind that when a vehicle is moving directly towards or away from the gun, the relative speed will be zero.

When it comes to tanks, they turn in a very similar way.

24.2. The Protactor as a turning tool

The protactor is also used to properly turn tanks, halftracks, armored cars and light vehicles.

Cars always use the internal arc of the protactor. Trucks, halftracks and armored cars, always use the external arc.



25. CREWS

25.1. Vehicles, basic concepts

Playing with vehicles is easy once you know the basic concepts required to use them, and understand how they work. In this chapter you will learn:

- What an “Impulse” is
- The Crew

25.2. Impulses

When it comes to vehicles and guns, we divide the turn into “Impulses”. Think about the “Impulses” as actions, when it comes to machines. All the vehicles (and artillery pieces) have four impulses, no matter the Quality of their crews.

This is just a way to divide the time a vehicle operates into four equal periods. So, for example, a tank could move during the first impulse, move while it turns the turret in the second, shoot on the third one, and move back to cover on the last impulse. As you can see, moving and turning the turret uses one impulse, not two.

As in the case of actions and troops on foot, we mark the used up impulses putting a die beside the vehicle.

25.3. Crew actions

A vehicle will not fight by itself; it needs a crew, and every crew member will perform only one task during one impulse.

While the crew is operating a vehicle, they can't use their own actions to perform actions as individuals. The player says what they do in every impulse, and every crew member can do only one of the actions listed in the “Individual Actions Of Crew Members Per Impulse” table.

INDIVIDUAL ACTIONS OF CREW MEMBERS PER IMPULSE	
Position	Action
Commander/Skipper	Issue an order Change the target Range estimation (helps the gunner) Throw/release smoke Fire the coaxial MG Target acquisition
Commander-gunner	Fire the gun Issue an order Change the target Throw/release smoke Fire the coaxial MG
Commander-gunner-loader	Fire and load the gun Issue an order Change the target Throw/release smoke Fire the coaxial MG
Gunner	Fire the gun Fire the coaxial MG Change the target
Loader	Load the gun
Driver/Pilot/Coaxwain	Driver/Pilot/Coaxwain
Single-seater Pilots	Pilot Use the Weapons
Radioman/Driver Asst.	Use the radio Fire the MG
ALL	Open/Close/Lock/Unlock the hatch/ramp Spot an enemy Help to move the body of a fallen crew member Get personal weapon from the rack Extinguish a fire Repair (reduces one point of damage) Replace a vision block

There are only two activities that must be performed while the tank is not in motion: firing the tank weapons and repairing the damage. Everything else can be done while the tank is moving.

Only when a crew member leaves the vehicle (because it can't move or it can't fire) he may play as an individual figure. Keep in mind that when a crew fights as infantry, its Quality drops two levels.

25.4. Crew members and Quality

The crew members Quality greatly affects the performance of a vehicle. However, if one crew member must perform other crew member's duty (because of a casualty), he will do so, but with his Quality reduced by one. This is not applicable to the Commander as he can use his Quality in every battle station without any penalty.

25.4.1. Gunner

The Quality of the gunner is used to resolve combat, and is even more important than the range to the target.

A Gunner can only fire against an acquired target.

Remember, when spotting an enemy element does not require a die roll because there is no way to roll a die and to fail the spotting, that element is considered an "Acquired target" and can be fired upon in the same impulse it was seen.

25.4.2. Loader

The Quality of the loader is used to calculate the number of rounds a gun can shoot in a turn. As for vehicles, a turn is divided into four impulses, and the number of rounds must be divided into four. Any remaining round is added to the first impulse the gun shoots.

Example; a T-34 1942 can shoot as many rounds in a turn as the "Loader Quality". If the Loader has a Quality of three, this means that the tank may fire three rounds. Three rounds divided into four impulses means that the T-34 will not be able to shoot in one of the impulses.

If this tank only shoots once in a turn (because it was moving on the rest of the impulses), it will be able to shoot a maximum of two rounds. If the same tank shoots during two impulses of the turn, it could shoot two rounds on the first impulse, and one on the other one.

It could fire all the rounds only if it uses four impulses to shoot.

25.4.3. Driver/Pilot/Coaxswain

The Quality of the Driver/Pilot tells us how many inches the vehicle will accelerate/break on every impulse, and the number of direction changes the vehicle will be able to do in a whole turn.

It also affects the way the vehicle behaves on soft or slippery ground.

25.4.4. Radio

The Quality of the radioman affects to the information that can be transmitted to another station during a single impulse (vehicle or gun) to report of an enemy element, type and position.

When a tank spots an enemy, the radioman can transmit its type and position to as many other vehicles as its Quality.

Of course, only tanks equipped with transmitters can send information. Tanks equipped with receivers can only receive information.

25.4.5. Commander/Skipper

The commander can help the gunner acquiring targets and to increase the accuracy of the gunner. It is the only crew member that doesn't reduce by one his Quality when performing other crew member's duty.

In many situations, its mere presence increases the performance of the crew.



26. FIRING THE GUN

26.1. Finally, we are here

Now we know enough about guns and vehicles to fire the gun.

In this chapter, you will learn how to shoot and how to apply damage to the target. You should be familiar with all the concepts, but do not hesitate to return to previous chapters if you need to remind yourself of something.

We will follow an example. The attacker is a T-34-76 and the target is a PzKpFw IV F1. Both tanks are in the open, at the same level, the day is clear and both crews are buttoned-up. The Quality of the T-34-76 is three, and the Quality of the German crew is four. The Speed of the PzIV is eight.

26.2. Shooting procedure

The procedure is as follows:

- Determine the range and the sector where the shell will hit
- Spot (if necessary) the target
- Chose if you want to aim at the hull or turret
- Ask the enemy about the Size of the target and the relative armor for the sector/height
- Adjust the shot
- Add or subtract the modifiers
- Roll the dice
- Apply the damage
- Reduce by one the number of the target's actions (only one per impulse and "fan sector")

T-34/76B 1941
Can't pivot. Speed: 20" or 28" (road) per impulse, 77 rounds

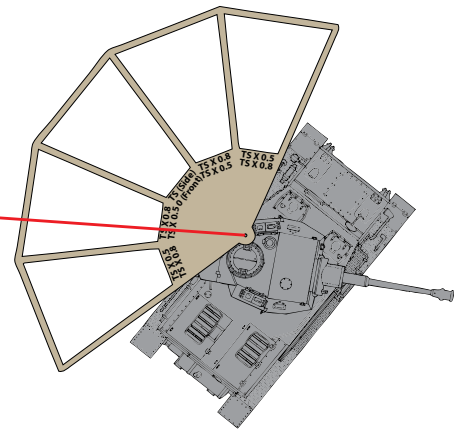
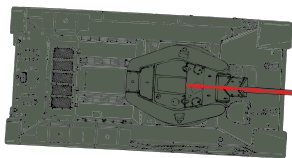
VO Tons 28
G Pressure 0.6

Shell	Type	70" (100m)	500m	1000m	1500m	2000m	Hit	Crater	R4	R3	R2	R1
BR-350A	APHEBC	78mm/4D	71mm/4D	63mm/4D	56mm/4D	50mm/4D	3D(3)					
BR-350B	APHEBC	95mm/4D	87mm/4D	77mm/4D	68mm/4D	60mm/4D	4D(3)					
BR-350P	APCBC	104mm/4D	85mm/4D	69mm/4D	57mm/4D	46mm/4D	1D(3)					
BP-350A	APCR	130mm/4D	92mm/4D	60mm/4D	39mm/4D	26mm/4D	1D(3)					
OF-350M	HE		16mm/8D				8D(5)	D-3(1*)	D-1(2*)	D(3*)	D+1(6*)	D+2(18*)
BP-350A	HEAT		80mm/8D				8D(5)					

PzKpFw IV Ausf F1
Can't pivot. Speed: 10" or 21" (road) per impulse, 90 rounds

VO Tons 22
G Pressure 0.8

Shell	Type	100m	500m	1000m	1500m	2000m	HE	Crater	R4	R3	R2	R1
K.Gerät Pz.	APCBC	52mm/3D	48mm/3D	45mm/3D	42mm/3D	37mm/3D	1D(3)					
PzGr. 39/1	APCBC	54mm/3D	50mm/3D	47mm/3D	42mm/3D	38mm/3D	1D(3)					
PzGr. 39/2	APCBC	60mm/3D	53mm/3D	50mm/3D	44mm/3D	38mm/3D	1D(3)					
Gr. 38 HLC	HEAT		110mm/3D				3D(3)					
SprGr. 34	HE		13mm/6D				6D(5)	D-3(1*)	D-1(5*)	D(6*)	D+1(12*)	D+2(19*)
Rt. Kw. K	Shoptk	35mm/1D	26mm/1D	23mm/1D	17mm/1D	15mm/1D	3D(2)					D-1(5*)
Nbgc. Kw. K	Smoke											



26.2.1. Determine the range and Hit Sector

In order to know exactly the range and Hit Sector, we must use the Protactor. Place it on the side of the target where you want to hit, take the thread and align it with the barrel of your gun up to the center of the turret or the breach.

The thread will trace a line of fire between the attacker and the target and determine which fire sector should be used. The thread length will give us the range.

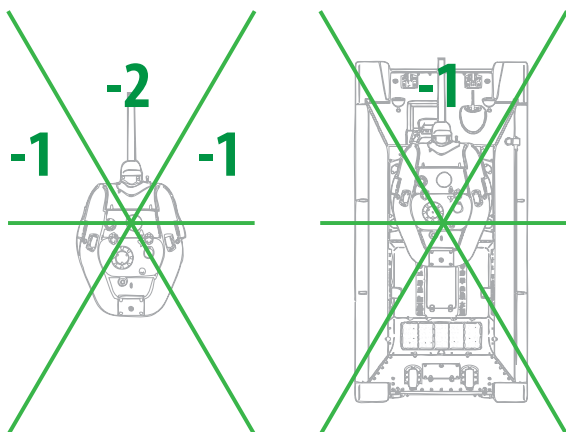
This information is critical for the next steps in the shooting process.

In this example, the shell will hit the target in sector #8, and the length of the thread is 11".

26.2.2. Spotting from a vehicle

Enclosed vehicles need to spot the enemy before engaging in combat unless the commander is fighting with the hatch open. If this is the case, the tank spots as any other figure in the game.

Every enclosed vehicle (and the turret) uses a six sector system to spot, where the "front" is always relative to the position of the bow (hull) of the gun (turret).



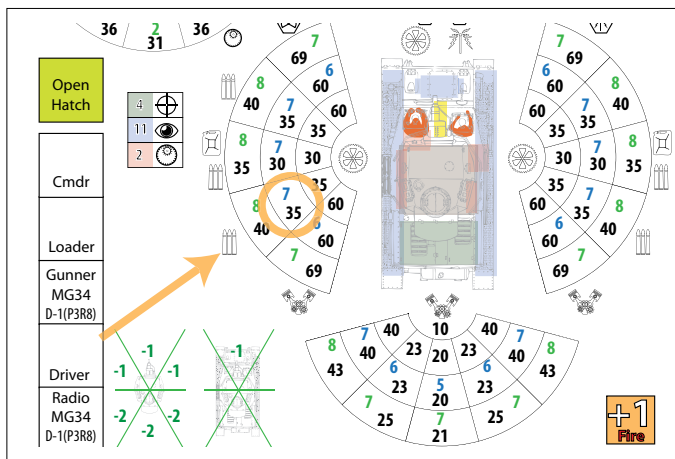
The procedure is the same as described in "2.4. Spotting" on page 18. Simply bear in mind that the "sight" you should use is that defined on the Data Card and the majority of times, it will be a negative number.

This means that in order to spot an enemy in the open, you must roll a die and get a result equal or less than six minus the sight value. If this is not needed because by the very nature of the situation, you have a 100% chance to spot the enemy, it is considered it as an "automatic spotting" (so the target has been acquired) and this means that you can shoot the in the same Impulse as when you spotted it.

In this example, the crew inside the hull can only try to spot in the front arc, with a "Sight Modifier" of -1 (so in order to spot an enemy in the open they will need to roll a die and get anything but a six. For the crew in the turret, the situation is slightly better, because they can try to spot in the three frontal arcs; in the sides they will spot an enemy in the open with a die roll from one to five, but in the central one, only with a die roll from one to four.

The crew is buttoned-up, and this means that in order to be able to shoot against the PzIV, the T-34-76 must spot it. As we saw in "2.4. Spotting" on page 18, there are no modifiers that restrain the spotting of the target because it is in the open, and the day is clear (Visibility = 0).

On the other hand, we can use the Size of the target as a positive modifier. We just need to find the blue number (because we are spotting it from the same level, we read the central row) in the eighth sector. The Size is seven.



26.2.4. Finding relative armor for that spot

In the same cell, we found the blue number (or the green one if hit from a building) that told us the Size, we will find a black one. This is the Relative Armor at that spot.

As, the player chooses to hit the hull, in the card we are using for this example, we just need to find the black number (because we are spotting it from the same level, so we read the central row), in the eighth sector. The Relative Armor is 35.

When trying to spot, the Size is one of the factors that must be divided into the target crew Quality. The worse the crew Quality, the easier a tank is hit.

If after all the modifiers have been calculated, the player still needs to roll a die to know if it spots an enemy or not, this means that even if the tank was successfully spotted, the player would not be able to shoot against it in the same impulse, even if the figure that spotted is the gunner.

So, we start with a Sight Modifier of -2. But the Size is seven, and the target crew Quality is four, so $7/4 = 1$. The Size modifier is one, not enough to make an "Automatic Spotting". In order to spot the PzIV the Red Army tank must roll a die and get a value between one and five, but as we stated above, if a player needs to roll a die to spot it, it can not shoot at that target in this action or impulse. It rolls a four and the PzIV is spotted. The PzIV is not camouflaged, so there is no chance to avoid the spotting in extremis.

Anyway, let's imagine the T-34-76 can use another impulse to resume the firing process.

26.2.3. Choosing to aim at the hull or the turret

One of the most important modifiers when it comes to hitting the target, is the Size. The bigger the Size, the easier the shot. The difference between aiming the shell at the hull or the turret affects the shot (because the size of the turret is usually smaller than the hull) and also the damage distribution after the shot is determined.

In this example, the attacker chooses to shoot against the hull.

26.2.5. Preparing the shot

Here is where we get the first real values to know what will happen with our shot. At the end of the process we will have a value, called "To Hit".

This To Hit value ranges from one to six, but six always means a failure. This value dictates which values on the dice roll will be converted into Damage Points.

Later on, when you roll the dice to know how many damage points your shell will produce, the player will discard all the values bigger than the To Hit. And all those die rolls with a value equal or less than the To Hit value will be added up. This will be the final number of Damage points inflicted.

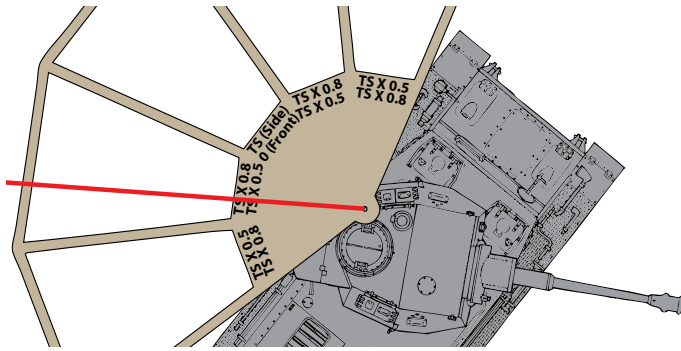
26.2.5.1. Gunners Quality

The very basic value to start preparing the shot against the enemy vehicle is the Quality of the gunner.

In this case, the gunners Quality is three. So our To Hit right now is three.

26.2.5.2. Relative Speed of the Target

The Relative Speed of the target is given by the Protactor. In every sector, there are two rows of multipliers, the external one, labelled "TS (Side)" allows us to calculate the Relative Speed of the target when we use the Protactor in one of the sides of the target. The other row, labelled "Front" allows us to calculate the Relative Speed when the Protactor is placed in the front or rear of the vehicle.



We used the Protactor on the side of the PzIV, so we must use the “TS (Side)” row. As we see, the thread is over the “TSx0.8” so we must multiply the current Target Speed (eight inches) by 0.8, this gives us six, so the Relative Speed is six.

The table “Aiming a target” gives us a first modifier taking into account some circumstances like the distance to the target, its size and speed. We will add this modifier to the Quality of the gunner.

As we will see immediately, every five inches of relative speed reduces by one the To Hit value.

In our example we have a To Hit of three, but we must subtract one because the Relative Speed of the PzIV is six. The To Hit value is two.

26.2.5.3. Range

The modifier given by the distance to the target is very important, and it is closely related to the Size of the target.

Simply multiply the Size by ten. If the target is closer than that distance, the Modifier will be +1. If the target is between ten and twenty times the Size, the modifier will be zero, etc. So the modifier depends on the distance to the target, and its Size, as shown in the next table

AIMING A TARGET	
Distance in inches...	Modifier
From 1” up to 10 x SIZE inches	+1
Up to 20 x SIZE times inches	0
Up to 30 x SIZE times inches	-1
Up to 40 x SIZE times inches	-2
More than 50 x SIZE times inches	-3

If the target is moving when it receives the shot, use the Protactor to calculate the Relative Speed using the last impulse speed. Every five inches of relative speed reduces the To Hit by one. This is not applicable to AA weapons.

As the size of the target in our example is 7 and our tank is only 11” away from it, this means that the modifier is +1, because we are at less than 70” (7 [the size] x 10). Our To Hit now is again three (two plus one).

Finally, there are some modifiers that reflect the different situations that make it easier or more difficult to hit the target.

26.2.5.4. Final tuning the “To Hit” value

However the basic To Hit value needs to be adjusted to fit special circumstances, so we need to use the following table in order to get the final To Hit.

MODIFIERS FOR FIRE AGAINST A VEHICLE	
Situation	Mod
First shot (non German gun/tank) against that target	-2
First shot (German gun/tank) against that target	-1
The target is not clearly visible	-1
Trying to shoot in reaction	-1
Other element is designating the target	+1
The Commander is helping the Gunner	+1
Gun Sight Modifier	+X

In our example our applicable modifiers are:

“-2” because this is the first shot against the PzIV and the T-34-76 is not a German tank

+3” because the Quality of our Gunner is 3 and

+2” for the “Gun Sight Modifier” (of the attacking tank or gun)

so we must add three to our To Hit, so we got a final To Hit of six, but the maximum To Hit value is five, so in our case, the effective To Hit will be five.

26.3. The Shot

On the T-34-76 Data Card, let’s say that the gun is already loaded with a BR-350P shell, an APCBC ammunition capable of piercing 104mm and that it delivers four damage dice. This four also means that the maximum damage per die for this particular projectile is four.

The Relative Armor (the black number appearing in the cell of the target Data Card) was a “35” (meaning 35mm), so the BR-350P is perfectly capable of perforating the armor on that spot from this angle.

A shell that is not capable of perforating the Relative Armour is harmless. It will not damage the vehicle at all; it will only count as one “hit” for other purposes or could reduce one of the target’s impulses, but only in certain circumstances and only if the shell is capable of perforating at least the half of the relative armor, as explained at “20.5. Additional Effects of Shells on Enclosed Armored Vehicles” on page 90.

If instead of black, the Relative Armor number is red, this means that the angle of impact is so big that the projectile can rebound. If this is the case, roll one die. A six means that the shell rebounded. It didn’t do anything to the enemy tank, but it counts as one “hit” for any other purposes and will reduce the number of impulses of the target in some cases.

26.3.1. Rolling dice

To shoot means to roll as many dice as Damage Dice are indicated by the shell.

In our case, the BR-350P delivers 4 dice. Let’s say we roll 5, 4, 3 and 6.

**WE ROLL FOUR DICE BECAUSE
BR-350P: 104MM/4D**



Once rolled proceed to the following steps in the given order.

Discard all the dice showing a six, because a six always means a failure.

We remove the six, so now we have 3, 4 and 5.

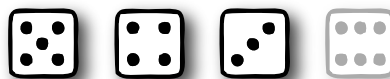
A SIX ALWAYS MEANS A FAILURE



Discard all the dice showing values bigger than the To Hit value.

Our To Hit value was five, so we do nothing.

TO HIT VALUE: 5

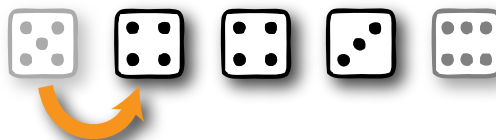


The top value of a die is the same as the Damage Dice are indicated by the shell.

The Damage Dice of the BR-350P was 4, so the maximum value must be four. We change 3, 4 and 5 by 3, 4 and 4.

**BUT THE MAXIMUM VALUE IS FOUR
BECAUSE**

BR-350P: 104MM/4D



Add all the face values. These will be the Damage Points.

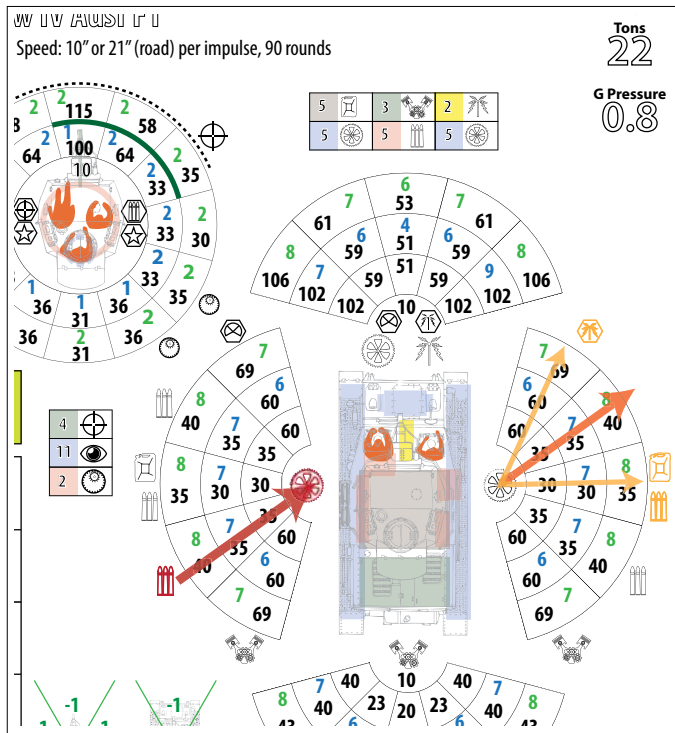
We sum 3, 4 and 4, so the shell delivered eleven Damage Points.

**THE NUMBER OF DAMAGE POINTS IS
THE SUM OF THE FACE VALUES**

$$4 + 4 + 3 = 11$$

26.3.2. Applying damage

These Damage Points (or DP) will produce effects in the target, as we saw in “1.2.4. Symbols” on page 84 and the following pages.



The red arrow shows the hit, the place that will take the first damage; the orange arrow shows the next sector to be affected, and the yellow ones, the last sector to be affected. This is the “order” of damage, simulating the effect of the shell traveling through the systems and crew members of the vehicle.

26.3.2.1. Creating the List of Systems and Crew

However the order is affected by the type of shells, as explained in “1.2.6. Effects of shells” on page 87. The APCBC works as follows:

EFFECTS OF SHELLS		
Type of Shell	Odd Damage	Even Damage
APCBC	System	Crew (D+1)

So, the list of Damage should look like this:



First, the two systems of the sector that receive the hit. The order is random (roll a die), but as the APCBC affects first a system, and then a crew member, we needed to include one between every two systems. When there is no crew icon in a sector this

means that any crew member could be affected, so we simply put a placeholder on the list, and we continue making a list with the icons in the sector marked by the orange arrow (only the tracks, but a hit from one side can't affect both), so we move to the next two sectors, marked with the yellow arrows.

If after the Damage Propagation Rule is applied, there are still DP to be spent; they are lost. Consider that the projectile lost all its energy.

26.3.2.2. Applying damage to the list

Now we simply distribute the damage, following the rules explained in the table “DEFAULT DAMAGE TABLE FOR VEHICLES” on page 87.

Using the example, we must apply eleven Damage Points to the PvIV hull. And this is its Damage Table.

5	3	2
5	5	5

As the first System on the list is the Left Track, and we see that it has five points, we use the very first five Damage Points to destroy this system.

Now we must apply the remaining six. The next candidate in the list is a crew member. According to the “EFFECTS OF SHELLS” table, the APCBC affects the crew with a D+1, so we pick randomly one of the crew members (the Loader) and roll a die. We get a 4, plus one means “No Effect”. A lucky guy, after all.

We used up one Damage Point for this, so now we must apply only five more.

The next candidate is Ammunition. Again we will use up only one Damage Point to check if the propellant explodes or not. As we see in the PzIV hull Damage table, the Ammunition value is five, so we need to roll a five or a six to produce the explosion. We got a three, nothing happens, and we used up another Damage Point, only four left.

Again a crew checks with a D+1. This time the luck says the Driver is the one to receive the hit. A die roll of three (plus one) means that he is stunned. He will be disabled until the end of the turn. One Damage Point out. Three more to go.

This time the Damage Point could produce a fire. The Fuel has been hit and will start a fire with five or more. As the PzIV uses gasoline, we will add one to the die roll. A three plus one is harmless and only two more Damage Points left.

The radioman is the next one. A die roll of one (plus one) means instant death.

The last Damage Point again affects the Ammunition. And again, a lucky die roll of one avoids the explosion.

The tank is unable to move due to the destruction of the left track. The driver is stunned, and the radioman is dead. Also, as the tank received a hit, it loses one Impulse.

26.4. Firing against a Vehicle System

A vehicle can be fired at in two ways; by firing at the shell or turret, or at any of its systems (such as the track system, cannon, engine, etc.).

In many cases, a player decides to shoot at the shell or turret of another vehicle, without providing more detail about the exact target. In this case, the projectile hits the sector from which it is fired, and the damage is distributed throughout the systems and crew, following a sequence that simulates the effects produced by the projectile and shrapnel, and fragments that fly off in its path. However, a player can (if the quality of his crew allows it) choose as a target, any of the systems that appear on the “cell fan” through which the projectile enters, even if this does not correspond to the specific sector through which the projectile enters. Even so, the relative armor and the size corresponding to this sector are used (in some cases, this relative armor can be modified, but this is clearly marked on the Data Cards) since this relative armor does not correspond to a specific place on the vehicle hit by the projectile, but rather to the angle of impact of the projectile when hitting the armor.

The advantage of shooting at a specific system is that all damages arising will be to that system. However, in return, if the shot fails, the target is not damaged and doesn't even lose an impulse for being shot at. The missile is considered to have failed.

When the player chooses to direct the shot against a specific system, the target is governed by the quality of the crew. This simply allows for the option of firing against a specific system or not.

FIRING AGAINST A VEHICLE SYSTEM	
QUALITY	ELIGIBLE SYSTEMS
1	NONE, it can't target individual systems
2	Tracks,wheels, Gun
3	Tracks, wheels, Gun, Turret rings
4	Tracks, wheels, Gun, Turret rings, Engine, Visors
5,6	Any system

Another issue is whether the projectile actually hits the target. This is determined by finding the To Hit for that shot in the usual way, and it will give us a value between one and five. A die roll of equal or less than the To Hit means that the projectile has targeted the chosen system. You then simply roll the dice to find the number of hits that system receives.



27. GUNS AND MORTARS

27.1. Artillery and mortars

When a gun launches a projectile against a target within the line of sight of the firer - or what's called "Direct Fire" - the procedure is quite similar to the one described before in "Vehicles". The only difference is that the "size" of some target is not on a card, but in a table.

TARGET SIZES	
Target	Size
Human, Mg, Mortar, Window	1
Door	2
Garage door	3
House, per each 2x2"	25
Example, small cottage (one storey) 4"x2" with high thatched roof	75

You will notice that when it comes to shooting against house-sized targets, in normal conditions, this means that the projectile always hits the target. This is logical if we assume that usually, the Quality of the gunners and the sights used in the guns were good enough to ensure a 100% success rate in the ranges covered by the rules (over 200 yards), so basically, anything bigger than a small cabin will be hit nearly automatically if the combat environment is not too obscured by smoke and dust.

Anti tank projectiles have been designed to defeat armor, so most of them have a very limited explosive charge and produce damage thanks to kinetic energy.

Please note that we calculated the effects of artillery shells beyond the scope of the rules. So if you use 155mm ammunition in a normal game, you will probably kill all the enemies and also 80% of your own men.

In the rules, this means that when an anti tank round hits an unarmored target, the projectile simply passes through it, causing damage until it loses its energy.

High explosive projectiles, on the other hand, contain a relatively heavy explosive charge that explodes (usually) when the shell hits the target, causing damage thanks to the combined action of the burst shockwave and the shrapnel from the shell case.

7,5cm Pak 40 AT gun

Can be towed. Speed when towed: Driver Quality x 2 (off road) 24" (road) per impulse.
 Limber/unlimber cost: 8 actions.
 Traverse, 60°.
 Needs 4 actions to move 5".
 Needs 2 actions to turn 30°.
 Ammunition crate contains 3 shells, costs 1 action to move a crate a distance of 4".

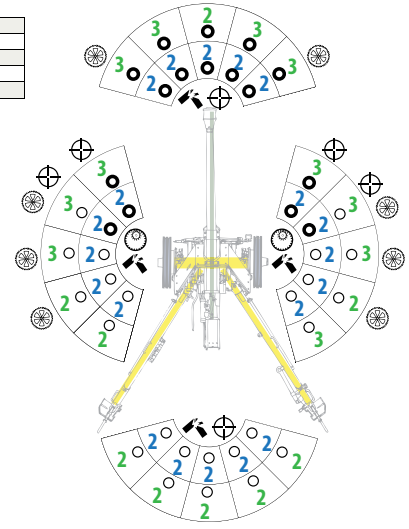
V0
Tons
1.5
G Pressure
0.6

DAMAGE CONSEQUENCES	
Equipment	Effect
Visor	Gun sight reduced in 2 until fixed
Ring	The gun can't turn
Wheels	The gun can't move

2	1	1	1
2	3	2	2

Cmdr	
Gunner	
Loader	
#3	
#4	

0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0



7,5cm Pak 40 (SHOTS PER TURN: LOADER QUALITY) (GUN SIGHT: 2)												
		Against Armor					Against Other Targets					
Shell	Type	100m	500m	1000m	1500m	2000m	HE	Crater	R4	R3	R2	R1
PzGr. 39	APCBC	164mm/4D	146mm/4D	125mm/4D	111mm/4D	98mm/4D	1D(4)					
PzGr. 40/42	APCR	194mm/4D	174mm/4D	149mm/4D	127mm/4D	106mm/4D	1D(4)					
SprGr. 40	HE			11mm/8D			6D(5)	D-3(1*)	D-1(3*)	D(6*)	D+1(12*)	D+2(19*)
Gz. 38 H/L/B	HEAT			88mm/3D			3D(5)					

- Not protected at all
- ◐ Protection against light weapons and fragmentation
- Protection against HMG, light weapons and fragmentation

Zis-2 57 mm Semiautomatic AT gun

Can't be towed. Speed when towed: Driver Quality x 2 (off road) 24" (road) per impulse.
 Limber/unlimber cost: 6 actions.
 Traverse, 60°.
 Needs 4 actions to move 1".
 Needs 2 actions to turn 30°.
 Ammunition crate contains 5 shells, costs 1 action to move a crate a distance of 4".

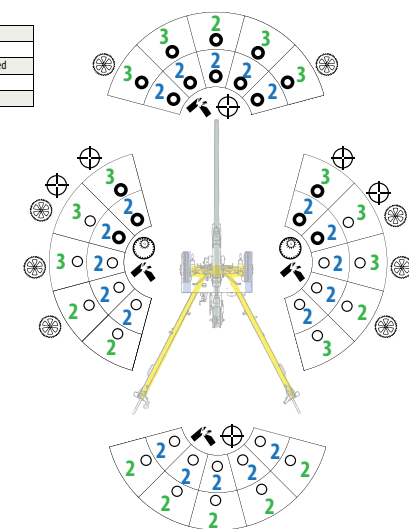
V0
Tons
1
G Pressure
0.6

DAMAGE CONSEQUENCES	
Equipment	Effect
Visor	Gun sight reduced in 2 until fixed
Ring	The gun can't turn
Wheels	The gun can't move

2	1	1	1
1	2	1	1

Cmdr	
Gunner	
Loader	
#3	
#4	

0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0



57mm ZIS-2 (SHOTS PER TURN: LOADER QUALITY + 9) (GUN SIGHT: 1)												
		Against Armor					Against Other Targets					
Shell	Type	100m	500m	1000m	1500m	2000m	HE	Crater	R4	R3	R2	R1
BR-271	APHEBC	115mm/3D	103mm/3D	91mm/3D	78mm/3D	68mm/3D	1D(3)					
BR-271K	APHE	112mm/3D	94mm/3D	75mm/3D	57mm/3D	44mm/3D	1D(3)					
BR-271P	APCR	183mm/3D	147mm/3D	111mm/3D	84mm/3D	64mm/3D	1D(3)					
O-271	Frag			7mm/6D			3D(5)		D-1(1*)	D(2*)	D+1(5*)	D+2(5*)
Shch-271	Canister						3D(2)					D-1(2*)

- Not protected at all
- ◐ Protection against light weapons and fragmentation
- Protection against HMG, light weapons and fragmentation

It must be noted that the shockwave energy decreases exponentially, so most of the damage beyond a few meters away from the impact point is delivered by the fragments and shrapnel. It is also interesting that the resistance against the effects of the shockwave of living beings is much higher than that of buildings, even the stronger ones (the energy to collapse a concrete building is about seven times smaller than that to kill a human). In the rules, we implemented this creating, for each shell loaded with explosive charge, five concentric “rings” of decreasing damage.

We also made a distinction between shells shot by field guns, howitzers and tanks, and the shells shot by mortars. The main reason for this is the rate of fire of the mortars and the philosophy behind the use of this weapon.

Mortars are not designed to deliver accurate fire, but to saturate an area with indirect fire. This is why the use of mortars and the damage produced by their projectiles is explained in its own subchapter.

27.2. Guns

Guns, like tanks, may shoot more than once per round. The Quality of the loader is used to calculate the number of rounds a gun can shoot in a turn (RoF). That number of rounds must be divided into four. Any remaining round is added to the first action the gun is fired.

Example; a PaK 40 can shoot four rounds plus the “Gunner Quality” in a turn. If the Gunner has a Quality of three, this means that the gun may fire seven rounds. Seven rounds divided into four actions gives us one action with two rounds, and one with only one.

If this gun only shoots once in a turn (for any reason), it will be able to shoot a maximum of two rounds.

If the same gun shoots in two actions of the turn, it could shoot two rounds the first action, and another one in the second round.

It could fire all the rounds ONLY if it uses the seven actions to shoot.

27.3. Mortars

The mortar fire is a special case of artillery fire, not only because it’s used most of the times to deliver indirect fire, but also for its very high rate of fire. So we assume that in one action, the same mortar could shot three or four shells. This is also why the mortar shell seems to deliver more damage than expected.

Keep in mind that mortar incoming rounds make a very distinctive sound, so the targets of mortar fire will always have the chance to react to incoming rounds or shells passing overhead.

When a mortar fires a single shot, we apply the same procedure described above for artillery shells.

But when the mortar fires several shells, we calculate the damage in a different way.

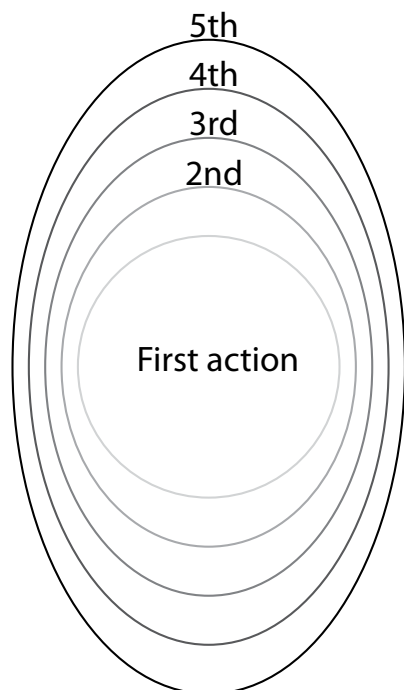
Instead of resolving every shot, we use an elliptical impact area, being the length and width closely related to the caliber of the shells and the time the mortar has been firing.

We apply the damage using the standard combat damage (1D).

For example; for a Soviet 50-PM 40 50mm mortar firing one action, the length (along with the firing axis of the mortar) will be 8” and the width, 8”. For every

MORTARS									
	Cal	Mortar	Armor	HE	Crater/R5	R4	R3	R2	R1
US	60mm	M2	20mm/1D	3D(4)		1D-1(1")	1D(2")	1D+1(3")	1D+2(5")
US	81mm	M1	40mm/3D	6D(5)	D-3(1")	1D-1(2")	1D(3")	1D+1(4")	1D+2(7")
SU	50mm	50-PM 40	20mm/1D	3D(4)		1D-1(1")	1D(2")	1D+1(3")	1D+2(4")
SU	82mm	82-PM 41	40mm/4D	4D(5)	D-3(1")	1D-1(2")	1D(4")	1D+1(5")	1D+2(8")
GE	5cm	Leichte Granatwerfer 36	20mm/1D	4D(4)		1D-1(1")	1D(2")	1D+1(3")	1D+2(4")
GE	8cm	Schwere Granatwerfer 34	40mm/4D	4D(5)	D-3(1")	1D-1(2")	1D(4")	1D+1(5")	1D+2(8")
JA	50mm	Type 89	20mm/1D	3D(4)		1D-1(1")	1D(2")	1D+1(3")	1D+2(4")
UK	2"	2"	20mm/1D	3D(4)		1D-1(1")	1D(2")	1D+1(3")	1D+2(4")
UK	3"	3"	40mm/5D	4D(5)	D-3(1")	1D-1(2")	1D(4")	1D+1(5")	1D+2(10")

additional consecutive action, the length will be increased in 3" and the width in one. Every action the mortar keeps firing the player rolls 1D for the effect of its shells on each figure inside the increasingly bigger elliptical area.



So if the same 5" mortar is firing for two whole turns (six actions), the final affected area will be 20" long and 14" wide.

Mortars may deliver direct fire if the target is in sight. The minimum range for light mortars is about 20", for medium mortars, 60".

Light mortars need one action to be setup or taken down. Medium mortars need 2D actions for the same. Soviet wheeled medium mortars need 1D6 actions. Several figures can use their actions to do these tasks.

The arc of fire of a light mortar is 60 degrees; for a medium mortar, only 15, and these can't turn, so be careful when you deploy medium mortars on the gametable because if the target is not clearly in front of you, you will not be able to deliver effective fire.

27.3.1. Mortar ammunition

The mortar ammunition is specified in the Order of Battle and the scenario. Usually, every ammunition carrier may carry up to twelve bombs for the 50/60mm or 2" mortars, and up to six for the 81/82mm, 8cm or 3" mortars. Mortars deployed in defense before the game starts will probably have enough ammunition stored in advance.

Each member of the rifle platoons and company headquarters can carry one or two mortar rounds.

Every action a mortar is fired, it uses up three mortar bombs for 81mm mortars, or six for 50/60mm mortars.

The minimum range for 50/60mm mortar bombs is 20", for 81mm, 35".

27.4. Indirect Fire Control

When mortars and howitzers operate as indirect fire (most of the time), they need a Forward Observer. For the direct support mortars listed in the game, any Platoon Leader may play this role, as long as he is in sight of the target and has a line of communication with the mortars.

A Forward Observer may work even from an undetected Mojon, and the player does not need to place the figure on the game table to play this role.

If there is no Forward Observer, or the communication is lost, the mortars can keep firing at their current targets, but no new indirect fire support requests are allowed.

"A method that was used successfully in World War II was for the assaulting platoon to approach as close as possible to the objective while the mortars fired HE to suppress the enemy. On a prearranged signal by the assault force, the mortars switched to WP rounds and fired several in quick succession. The bursting WP rounds were the signal to the rifle platoon that the mortars were shifting their fires 50 to 100 meters beyond the objective. As soon as the last WP round had burst, the assault forces closed with the enemy. Not only do the WP rounds signal the shifting of fires, but also the smaller casualty-producing radius provides a margin of safety for the assault force. The psychological effect of the WP and the smoke produced combine to create confusion among the enemy during the critical moments when the friendly forces are exposed. This requires well-trained and practiced mortar crews, as well as close coordination between the mortar section and the assaulting force.

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28. ANTI TANK RIFLES AND ROCKETS

28.1. Anti Tank Rifles

Anti tank rifles work the same as the artillery, but as they usually shoot non-explosive projectiles, there are no blast effects.

ATR's can fire against personnel or vehicles. Against figures, they work as a simple bolt action rifle, delivering a damage of D-4 and with a penetration of 6.

ATR's are identified as soon as they fire.

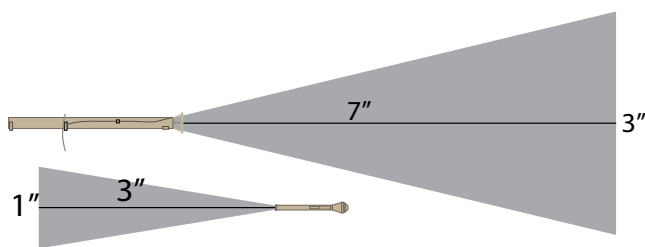
28.2. Rocket Launchers

Most of the rocket launchers projectiles were designed to deal with armor and bunkers using hollow charges. This means that the explosive was designed to concentrate the energy of the explosion in only one direction. This is why, despite the explosive charge, they were usually not too dangerous for personnel relatively close to the impact point.

For purposes of the game, they work the same as the artillery. These weapons are formidable, but the lack of optical sights make them more inaccurate than normal fire.

28.2.1. Rocket Launchers back blast

The back blast of Bazookas and Panzerschreck is very dangerous, and extends 7" behind the weapon, with a maximum width of 3", as shown in the illustration. For Panzerfausts, the back blast size is 3" by 1".



ANTI TANK RIFLES									
	Weapon	Range	Armor	HE	Crater/R5	R4	R3	R2	R1
SU	PTRD-41		40mm/1D						
SU	PTRS-41		40mm/2D						
GE	Panzerbüsche 39		25mm/1D						
FI	Lahthi L-39		30mm/2D						
JA	Type 97		30mm/2D						
PL	Wz. 35		35mm/1D						
UK	Boys		25mm/2D						

Every figure present in the marked area must roll on the Combat Table with a D+1.

These weapons can not fire from confined spaces smaller than 36 square inches.

28.2.2. Rocket Launchers rate of fire

They can fire once per action, as long as there is an assistant in the team; otherwise, they need one action to reload.

28.2.3. Rocket ammunition

German Panzerschreck ammo was packed in crates of two units, while Bazooka rockets were packed in crates of three, and Panzerfausts in crates of four. It costs 1 action to move any of these crates a distance of 4".

Panzerschreck team members may carry a canvas ammo vest, with three rockets for the gunner, and five in a wooden "backpack" in the case of the assistant.

Bazooka team members may carry the M2 ammunition vest, with a total of four rockets for the gunner, and eight in the case of the assistant.

PIAT team loaders may carry one three-round cardboard container in each hand, or six rounds in a wooden box with two handles. In both cases, it costs 1 action to move any of these crates a distance of 4".

To open a crate and prepare the rounds to be fired costs nothing.

Keep in mind that AT Rocket teams deployed in defense before the game starts, will probably have enough ammunition stored in advance.

ROCKET/RECOILESS LAUNCHERS										
		Against Armor			Against Other Targets					
	Weapon	Type	Range	Armor	HE	Crater	R4	R3	R2	R1
GE	Fauspatrone 30	HEAT	13"	100mm/8D	4D(5)					
GE	Panzerfaust 30	HEAT	13"	200mm/12D	8D(5)					
GE	Panzerfaust 60	HEAT	27"	200mm/12D	8D(5)					
GE	Panzerfaust 100	HEAT	45"	200mm/12D	8D(5)					
GE	Panzerfaust 150	HEAT	70"	300mm/10D	7D(5)					
GE	Panzerschreck RPzB 43	HEAT	70"	100mm/6D	4D(5)					
GE	Panzerschreck RPzB 54	HEAT	70"	160mm/6D	4D(5)					
UK	PIAT (1)	HEAT	50"	2D6x10mm/6D	4D(5)					
US	Bazooka M1	HEAT	15"	76mm/6D	4D(5)					
US	Bazooka M9	HEAT	20"	100mm/6D	4D(5)					

(1) The nominal penetration of the PIAT was about 100mm, but to reflect the peculiarities of this weapon (inaccuracy, faulty fuzes, etc), we decided to make it variable. The PIAT is NOT a rocket launcher, so it doesn't produce any back blast.

29. ANTI TANK MINES AND EXPLOSIVES

29.1. Anti Tank Mines and other explosive devices

This rule covers from anti-tank mines to satchel charges, Bangalore torpedoes and aerial bombs.

All these devices have something in common; a heavy load of high explosive that can deliver massive damage to vehicles, structures and living beings.

29.1.1. Laying Anti Tank Mines

Most of the time, the scenario will tell us how many mines are available for the player and are already laid when the game starts. The player simply draws a map as clear as possible showing clearly where the Anti Tank mines are laid.

However, many tanks and vehicles carried Anti Tank mines, so the player may want to lay them or to use them as weapons during the combat.

To lay a mine in open ground costs - in actions - three times the number of Damage Dice listed in the "Hit" column. Double in dirt roads, and half in soft ground (plowed, snow or sand). It is not possible to lay mines in paved roads during the game.

For example, to lay a Tellermine in open ground will cost 21 (7 Damage Dice x 3) actions. Several figures may use their actions to speed up the process.

Every Anti Tank Mine occupies a space of one square inch. Adjacent mines do not detonate sympathetically. If a player wants two different artifacts to be triggered at the same time, he needs to stack them together or to lay a line between them. This line can be spotted in the same way as Anti Tank mines and can be cut by fire, HE or hand grenades (it acts like an infantryman, with a modifier or +1; a "Dead" result means the wire was cut).

29.1.2. Using Anti Tank Mines to attack a tank or vehicle

Infantrymen can get close enough to a tank to put a mine on top of the deck and run away before it explodes. Or they can put the mine in the tank's tracks, but then they might not have enough time to escape.

In the first case, the delay can be set from one up to 5 impulses/actions. When an anti tank mine explodes on the deck of a tank, it works the same as an artillery shell hitting from the top.

AT MINES, AERIAL BOMBS AND EXPLOSIVE CHARGES								
Device	Type	Against Armor	Against Other Targets					
			Hit	Crater	R4	R3	R2	R1
Tellermine	HE	26mm/16D	7D(5)	D-3(3)	D-2(5)	D(7)	D+1(12)	D+2(37)
Riegel mine 43	HE	21mm/12D	6D(5)	D-3(3)	D-2(5)	D(6)	D+1(11)	D+2(34)
Topfmine	HE	21mm/12D	7D(5)	D-3(3)	D-2(5)	D(6)	D+1(11)	D+2(34)
Panzer stab 43	HEAT	100mm/16D	4D(5)	D-3(0)	D-2(0)	D(0)	D+1(0)	D+2(12)
TM-35	HE	15mm/8D	5D(5)	D-3(3)	D-2(4)	D(5)	D+1(10)	D+2(30)
AT Mine G.S MK II	HE	10mm/5D	5D(5)	D-3(2)	D-2(3)	D(5)	D+1(9)	D+2(26)
AT Mine G.S MK IV	HE	19mm/12D	6D(5)	D-3(3)	D-2(5)	D(6)	D+1(11)	D+2(33)
AT Mine E.P.	HE	11mm/6D	5D(5)	D-3(2)	D-2(4)	D(5)	D+1(9)	D+2(27)
US M1 or M4	HE	14mm/8D	5D(5)	D-3(3)	D-2(4)	D(5)	D+1(10)	D+2(30)
Type 99	HE	8mm/4D	4D(5)	D-3(2)	D-2(3)	D(4)	D+1(8)	D+2(24)
Bangalore Torpedo	HE	20mm/12D	6D(5)	D-3(1)	D-2(3)	D(5)	D+1(9)	D+2(26)
Satchel Charge	HE	21mm/12D	6D(5)	D-3(3)	D-2(5)	D(6)	D+1(11)	D+2(34)
Bangalore Torpedo	HE	20mm/12D	6D(5)	D-3(1)	D-2(3)	D(5)	D+1(9)	D+2(26)
Satchel Charge	HE	21mm/12D	6D(5)	D-3(3)	D-2(5)	D(6)	D+1(11)	D+2(34)
50Kg Aerial Bomb	HE	251mm/160D	15D(5)	D-3(8)	D-2(11)	D(15)	D+1(27)	D+2(80)
250Kg Aerial Bomb	HE	1251mm/800D	26D(5)	D-3(13)	D-2(20)	D(26)	D+1(47)	D+2(137)

In the second case, after the mine is set, the player rolls a die, this will be the number of actions/impulses before the mine explodes, even if the tank does not move at all.

The tank can not react to this attack if the crew is buttoned up.

29.1.3. Detecting Anti Tank Mines

Mines are always considered “Undetected”, but a player can try to detect them using the Spotting procedure as explained in “2.4. Spotting” on page <?>. Mines have a Size of zero, and its camouflage is the Quality of the troops that laid it.

29.1.4. Triggering an anti tank mine

A pressure AT mine will be triggered when a vehicle moves over the area or road where the mine was laid.

29.1.5. Exploding Anti Tank Mines

When a vehicle triggers an anti tank mine, the very first effect applies to the track/wheel, then against every crewmember and passengers, and then against any random vehicle system.

If the number of Damage Points exceeds double the vehicle’s weight, roll a die as in the case of hand grenades and turn the vehicle, so the nose of the vehicle points in the same direction pointed by the lowest visible value of the dice. Check again for every surviving crewmember and passenger with a D+1.

If the number of Damage Points exceeds four times the vehicle’s weight, roll the die as in the case of hand grenades and turn the vehicle, so the top of the vehicle points in the same direction pointed by the lowest visible value of the dice, and the nose the next lower value. Check again for every surviving crewmember and passenger with a D.

29.2. Bangalore Torpedo

The Bangalore Torpedo can be used to clear barbed wire or other obstacles. Every Bangalore Torpedo section cleans an area of one square inch. A squad can carry up to ten Bangalore Torpedo sections, and these can be joined together to create a ten inch long Bangalore Torpedo.

30. FIRE, FLAMETHROWERS, SMOKE DUST AND FLARES



SA-Kuva

30.1. Fire

The dynamics of fire in the game will allow you to integrate it in your gameplay, but you should master its use before starting one, because in some environments (woods, built-up areas) the fire plays its own game. When a figure (human or beast) comes into contact with fire, it can suffer damage according to the following table. Without modifiers.

FIRE DAMAGE	
Roll	Means
1	Dead
2	Dead
3	Dead
4	Dead
5	Hunker Down
6	No effect

30.1.1. The life cycle of fire

Usually, a fire starts due to an explosion, the impact of a Molotov cocktail or the burst of a flamethrower.

The minimum size of a fire is 2"x2" (or a vehicle engine or fuel tank), and most of the time, its "strength" is determined by a die - the higher the number, the stronger the fire, being two the minimum strength (one means that the fire was put out). We advise you represent this value with a tiny die.

At the start of every turn, the strength of every fire "cell" can change. To do so, roll a die for every fire cell. If the result is lower than the current value, the fire strength is reduced by one. If the result is higher or equal than the current value, the fire strength is increased by one, and the fire can spread to an adjacent 2"x2" cell. Simply pick an area (it must be capable of catching fire) and assign it a strength of two.

If there are flammable materials in the cell, for wood or gas oil you need to add one to the die roll, or two for fuels like gasoline. Explosives never explode as a result of fire.

If the fire strength is reduced to one, it disappears. The affected area can be crossed, but no figures can stay there because the ground is too hot.

If the fire strength reaches the value of six, this means that the fire is out of control and the cell has been destroyed (if there is a wall or a part of a building, it will collapse; if it was a vehicle, it's destroyed).

Ruins and rubble generated by fire are impassable for everything but tracked vehicles.

As we will see later, every fire cell emits a smoke cloud of equal value as the original fire in that cell.

An already burnt object can't catch fire again.

30.1.2. Putting out fires (Optional)

A fire can be put out with water, sand, spades, fire extinguishers, etc. at the cost of one action per figure and attempt.

To reduce one point of fire, the player must roll a die (applying the corresponding modifier) and get a result higher than the fire value.

FIRE FIGHTING	
Equipment	Mod
Bare hands	-2
Spade, Broom	+1
Sand/Water	+2
Fire extinguishers	+3
Hose	+4

30.2. Smoke and Dust Clouds (Optional)

Smoke and dust clouds are not the same, and they behave differently, but both of them have similar effects on the battlefield.

Usually, the smoke is generated by artillery fire, smoke shells, smoke pots or smoke hand grenades, but also by fires.

Dust clouds are usually the result of a building collapsing (the dust associated with projectile explosions is included in the smoke) or other causes explained in the scenarios.

In each scenario, you will find a "prevailing wind" arrow and a wind force. This information will allow you to keep track of the smoke and dust in your game using simple smoke markers to identify the borders of the cloud, or only one if the cloud is not too big.

30.2.1. Life cycle of the smoke (Optional)

A "blob" of smoke (4"x4"x4") is automatically generated every turn by every fire cell. The new smoke will have the same density as the strength of the fire that creates it. So a fire with a strength of four will generate a smoke of density four.

Every turn, each smoke cell already present on the game table will shift 2" upwards, and expand its size in 1" in every direction, moving accordingly to the direction and wind force whilst losing one density point.

When it comes to keeping track of the drifting, spreading and the thinning of the cloud, use whatever you want. From cotton fluffs with a die close to them to mark the limits and density of the cloud, to card circles. Just use your common sense. We are here to fight, not to argue about fluid dynamics.

30.2.2. Smoke Devices

Smoke devices generate smoke with a density of twelve.

They are usually white, but the player can choose other colors to coordinate attacks or to use them to designate targets for artillery, tanks or tactical aviation.

In the following table, we translate real smoke devices to the game scale. Smoke screens should not be bigger than the sizes shown here.

SMOKE SCREENS					
Source	Deployment	Height	Width	Length	Turns
Smoke Mortar Shell	Mortar 50/60mm	10"	16"	28"	2
Nebelhandgranate	Throwable 19"	10"	16"	28"	2
Smoke Hand Grenade	Throwable 10"	10"	16"	28"	2
Smoke Shell	Gun/Mortar	10"	16"	70"	5
Smoke Pot, Projector	Deployable	10"	16"	170"	12

Extracted from "German Use of Smoke" (Tactical and Technical Trends, No 6, Military Intelligence Service, War Department, August, 27, 1942)

30.2.3. Life cycle of dust clouds (Optional)

Dust is generated when a wall or a roof collapses. The dust clouds are 4"x4" and at the moment of creation the player must roll a die to determine their density.

Also, explosions generate dust in the rings five and four with a density of six and a height of 8".

Every turn, each dust cloud already present on the game table will move accordingly to the direction and force of the wind, and will lose one density point.

30.2.4. Effects of smoke and dust in the combat and movement (Optional)

All elements (bar tanks) can not end their movement inside an area covered by smoke or dust.

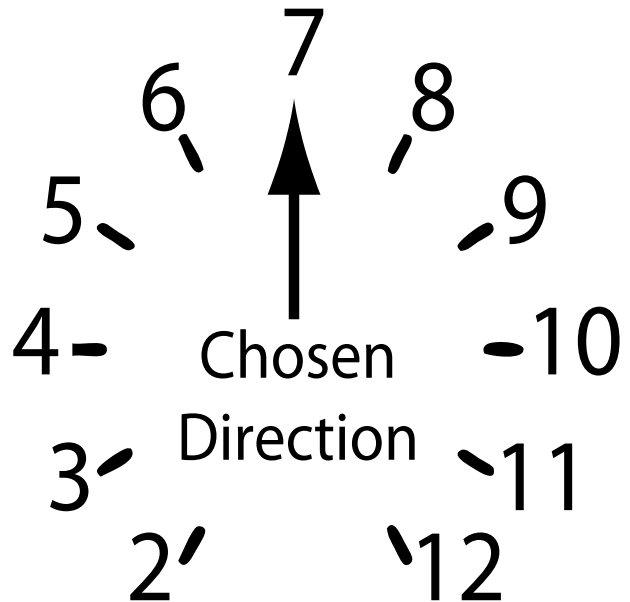
These elements, when covered by smoke or dust, must try to get out.

Neither the dust nor the smoke offers any kind of protection against enemy fire. However, they may offer some Cover because of the Concealment.

If an element is already moving when the cloud surrounds it, the element can keep moving in the same direction, even if the visibility threshold prevents them seeing where they are going at that moment.

When troops on foot find themselves suddenly inside a cloud and they are unable to see the way out, or a figure recovers from injury, or after being stunned, they will probably lose their way. In this

case, the controlling player choses the direction he wants to move the troops, and how much they will move and rolls two dice. The result of the dice will determine the direction followed by the figures. The angles are the same used in the Protactor, so you can use it as a template.



30.3. Flamethrowers

When a fireball from a flamethrower bursts, all the figures in the room (or less than 6" from the impact point if outdoors) will be forced to react (and take cover or run away).

Despite the idea popularized by films and videogames, flamethrowers do not explode when hit by fire or exposed to fire, unless stated otherwise. Usually, the fuel is thickened and needs to be projected to be able to burn.

FLAMETHROWERS AND MOLOTOV COCKTAIL

Country	Weapon	Range	Radius	Uses	Notes
SU	ROKS-2	11"	4"	9	Concealable; tank looked like a backpack
SU	ROKS-3	11"	4"	9	
GE	Eintossflammenwerfer 46	12"	4"	1	Concealable and disposable, small and very light
GE	Flammenwerfer 35	11"	4"	11	Unreliable in cold environment
GE	Flammenwerfer 41	14"	5"	12	
JA	Type 93	12"	3"	10	Unreliable in cold environment
JA	Type 100	13"	4"	10	
PL	K-Pattern	12"	2"	30	Flammable, range decreases 1" for every 4 shots
US	M1A1	13"	4"	10	
US	M2	13"	4"	14	
UK	Portable, No 2	18"	6"	10	
	Molotov	8"	2"	1	

Most of them are very heavy. This means that a soldier carrying a flamethrower can not climb walls or cliffs, nor swim.

The flamethrower can project a stream of flammable liquid, ignited or not. Sometimes, the user may choose to shoot some “blotches” of unignited flammable liquid against a target and to light all of them launching a final burst of ignited liquid.

30.4. Star shells and Flares

Star shells and flares are used to illuminate an area, as a signal or to designate a target to the friendly tactical air force, tanks or artillery.

Flares are simply placed where the player needs them. They reduce the Visibility Condition (only due to darkness) by four in a radius of four inches, and one in a radius of six inches for two turns.

Parachute flares can be dropped out of planes or launched from mortars. They illuminate the area below for two turns (for a 50 or 60mm mortar) or four turns (in any other case). They reduce the Visibility Condition in a variable way.

PARACHUTE FLARES							
1st Turn		2nd Turn		3rd Turn		4th Turn	
Radius	VC	Radius	VC	Radius	VC	Radius	VC
30"	-1	20"	-2	10"	-3	5"	-4

Star shells is a parachute flare that illuminates the area below with a bright light, so most of the time these kind of devices are fired from ships. Each Star shell reduces the Visibility Condition (only due to darkness) by three for at least six turns, then every turn a die is rolled, and if the result is two or less, the star shell is depleted.



VEHICLES

THIS IS THE FINAL PART OF OUR JOURNEY.

ONCE YOU FINISH THESE CHAPTERS, YOU
WILL KNOW EVERYTHING YOU NEED TO
ENJOY A NEW EXPERIENCE. KEEP IN MIND
THAT YOU WILL NEED A COUPLE OF GAMES
TO LEARN THE MECHANICS, AFTER THAT,
EVERYTHING BECOMES VERY EASY.

Tanks
Light Vehicles
Landing Crafts and Boats
Airplanes

31. TANKS AND SPGs

M8 Scott

Can't pivot. Speed: 19" or 29" (road) per impulse, 46 rounds

VO Tons **16**
G Pressure **0.9**

Open Hatch

Cmdr M2HB D-3(P4R5)
Gunner
Loader (see note)
Driver

75mm M3 (SHOTS PER TURN: LOADER QUALITY + 3) (GUN SIGHT: 0)												
		Against Armor					Against Other Targets					
Shell	Type	100m	500m	1000m	1500m	2000m	HE	Crater	R4	R3	R2	R1
M72 Shot	AP	109mm/4D	92mm/4D	76mm/4D	62mm/4D	51mm/4D	1D(4)					
M48 Shell	HE			8mm/8D			8D(5)	D-3(L1)	D-1(5)	D(6)	D+1(12)	D+2(19)
M61 Shot	APCBC	88mm/4D	81mm/4D	75mm/4D	66mm/4D	59mm/4D	1D(4)					

When the M8 was in action, the commander positioned himself at the anti-aircraft machine gun and directed his crew, the gunner sat in the turret on the right side of the howitzer, the assistant driver/loader moved up from his seat in the right front hull, and the driver stayed at his position.
FM 17-69 Armored Command Field Manual - Crew Drill, Service of the Piece, and Gunnery (75-MM Assault Howitzer on Motor Carriage M8), War Department, 30 November 1943, pp. 3-5

31.1. The Tank in motion

The speed of a tank is specified in its Data Card. By default, the reverse speed is half the forward speed unless stated otherwise.

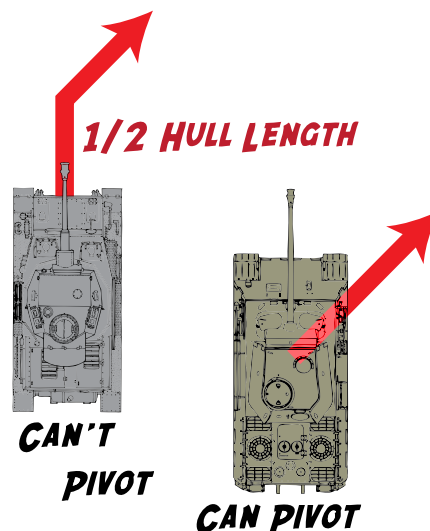
The acceleration of a tank depends on the Driver's Quality. Deceleration is always twice the acceleration. If in a given moment, a vehicle's acceleration or deceleration is bigger than the allowed, the controlling player must roll a die for damages for every inch in excess. The severity of the damage is shown in the following table.

DAMAGE BY ACCELERATION	
Vehicle	Die Roll
Trucks, cars, boats	D(3)
APC, IFV	D(2)
AFV	D(1)

31.2. Turning a Tank

The way a tank turns depends on its differential. Usually, tanks can not pivot unless stated otherwise, and most of them need to move to turn. By default, a tank must advance at least half its length before being able to turn 30 degrees. In other words, it can't start its movement turning.

However, if a tank can pivot (this ability will be specified on its data card), it can turn whenever it wants to, as long as it moves half of its length between turns. Tanks that can pivot may start their movement turning.



FERDINAND

Can't pivot. Speed: 5" or 10" (road) per impulse, 50 rounds

VO Tons **65**
G Pressure **1.2**

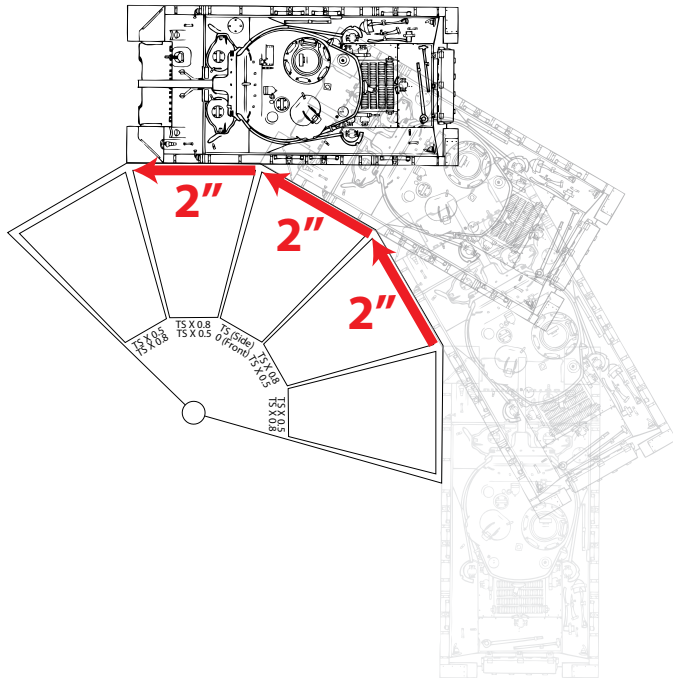
Open Hatch

Cmdr
Gunner
Loader
Loader
Driver
Radio

8.8cm Pak 43 (SHOTS PER TURN: LOADER QUALITY - 2) (GUN SIGHT: 3)												
		Against Armor					Against Other Targets					
Shell	Type	70" (100m)	500m	1000m	1500m	2000m	Hit	Crater	R4	R3	R2	R1
PzGr. 39/43	APCBC	232mm/6D	219mm/6D	204mm/6D	190mm/6D	176mm/6D	1D(4)					
PzGr. 40/43	APCR	270mm/6D	250mm/6D	228mm/6D	208mm/6D	189mm/6D	1D(4)					
Spgr.	HE			15mm/12D			12D(5)	D-3(2)	D-1(5)	D(4)	D+1(12)	D+2(22)
Gz-39 H/C	HEAT			110mm/6D			4D(4)					

If an armored vehicle can not pivot, use the protector to turn the vehicle while it advances.

Every 30° turn uses up two inches of the movement allowance.



31.3. Joining or leaving a road

When a vehicle leaves the road, the number of unspent inches is divided by two. If this number is greater than the maximum off-road allowance for that vehicle, apply the damages as if it was an excess in acceleration/deceleration.

When a vehicle joins a road, the number of unspent inches is doubled.

31.4. About Tank riders

Tank riders actions are spent at the same rate as the vehicle carrying them spends its actions.

Tank riders can disembark from a vehicle, even if they have no actions to do so. The figures are placed inside a radius of less than 4" from the vehicle, but they are considered Hunkered Down.

Tank riders can not Hunker Down while onboard.

Tank riders falling from a vehicle must roll a die; they will be wounded if the result is equal or less than the vehicle's speed that impulse divided by six.



31.5. About the crew

Dead or wounded crew members can be replaced, by another crew member but this costs two crew actions.

When crew members must fight as infantry, or carried troops must perform crew duties, their Quality is reduced by two.

Crewmembers can not Hunker Down while onboard.

31.6. Light Weapons against Tanks

Light weapons (and fragmentation grenades) can produce damage to some external equipment (including tank riders) in tanks.

Before shooting against the vehicle, the attacker must declare where he is aiming (tank rider, vision blocks, etc.). Then he rolls a die in the usual Combat Table, and every "Dead" means one damage point.

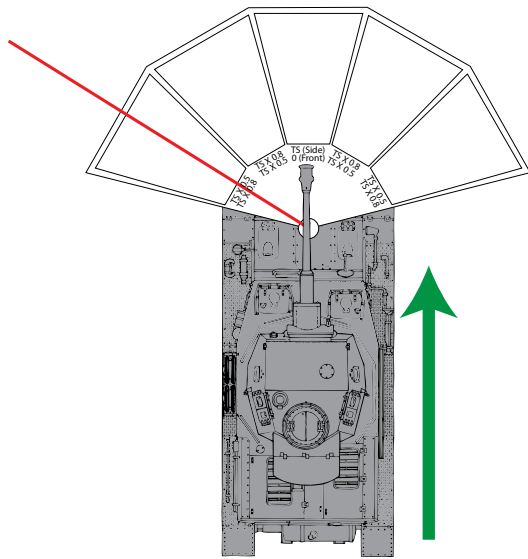
When a machine gun (or submachine gun) fires against a tank, it may roll as many dice as shown in the "Size" of the corresponding fan cell.

The procedure is the same as in the fire against foot troops, but with two additional modifiers; one +3 because of the armored nature of the target, and the Relative Speed of the tank.

For every 5" of Relative Speed, the modifier to the die roll is increased by one.

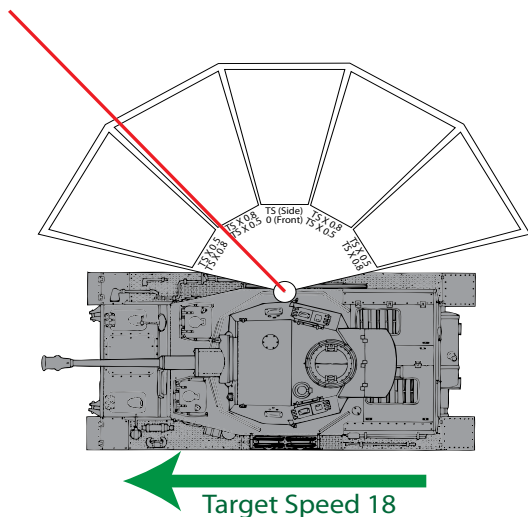
31.7. Relative speed of a tank

To know the relative speed of the target, multiply the actual speed of the target by the factor written in the corresponding “fan sector”.



Target Speed 18

For example; if a German Tank is moving at a speed of 18, and we are trying to hit from the sector indicated by the red line (the thread), we see that the relative speed will be the actual Target Speed (18 in our case) multiplied by 0.8, so it will be fourteen ($18 \times 0.8 = 14.4$). The modifier will be +2.



Target Speed 18

And the same applies if the target is moving across our line of sight. In this case, the same tank is moving at the same speed as before, 18. Now, the thread tells us that the relative speed of the target will be nine ($18 \times 0.5 = 9$).

Keep in mind that when a vehicle is moving directly towards the gun, or away from the gun, the relative speed will be zero.

“The most important consideration came after all the material conditions were filled. The personal aggressiveness of the commander while observing was decisive for success against numerically vastly superior enemy formations. The lack of good observation by the Russians often resulted in the defeat of large units. Tank commanders who slam their hatches shut at the beginning of an attack and don’t open them again until the objective has been reached are useless, or at least second rate. There are, of course, six to eight vision blocks mounted in a circle in every cupola that allow observation. But they are only good for a certain sector of the terrain, limited by the size of the individual vision block. If the commander is looking through the left vision block when an anti-tank gun opens fire from the right, then he will need a long time before he identifies it from inside the buttoned up tank.

“Unfortunately, impacting rounds are felt before the sound of the enemy gun’s report, because the speed of the round is greater than the speed of sound. Therefore, a tank commander’s eyes are more important than his ears. As a result of rounds exploding in the vicinity, one doesn’t hear the gun’s report at all in the tank. It is quite different whenever the tank commander raises his head occasionally in an open hatch to survey the terrain. If he happens to look halfway to the left while an enemy antitank gun opens fire halfway to the right, his eye will subconsciously catch the shimmer of the yellow muzzle flash. His attention will immediately be directed toward the new direction and the target will usually be identified in time. Everything depends on the proper identification of a dangerous target. Usually, seconds decide. What I said above also applies to tanks that have been equipped with a periscope” “No one can deny that the many casualties among the officers and other tank commanders were due to exposing their heads. But these men didn’t die in vain. If they had moved with closed hatches, then many more men would have found their death or been severely wounded inside the tanks. The large Russian tank losses is proof of the correctness of this assertion. Fortunately for us, they almost always drove cross-country buttoned up. Of course, every tank commander had to be careful while peering out during positional warfare. Especially since the turret hatches of tanks in the front lines were continuously watched by enemy sharpshooters. Even a short exposure could be fatal for the tank commander. I had commanded a folding artillery scope for just such cases. Actually, such a scope shouldn’t be missing in any fighting vehicle.”

Otto Carius - “Tigers in the Mud” p. 117-119

31.8. Hull-down tanks

When the target is a hull-down tank, only the turret can be shot at.

31.9. Close quarter combat against tanks

When foot troops are in physical contact with a tank they can try to disable the tracks, blind the vision blocks, try to bend the machine gun barrels, block the turret ring, or put something inside the gun, etc.

In an urban setting, most tank hatches are locked on the inside, so is not so easy for the enemy to open them from the outside and throw in a grenade. The same applies to pistol and vision ports.

For every action and figure choose the equipment you want to damage and roll a die.

CLOSE QUARTER COMBAT AGAINST VEHICLES	
Roll	Effect
1	Attacker dies
2	Attacker wounded
3	No effect
4	No effect
5	Equipment takes one damage point
6	Equipment takes 1D damage points

The following modifiers are added to or subtracted from the result.

CLOSE COMBAT AGAINST VEHICLES MODIFIERS	
Weapon	Modifier
For every 5" of vehicle's Relative Speed	-1
If the vehicle has pistol ports and the crew is alive	-1
Nahverteidigungswaffe (1)	-2
Bare Hands	-2
Civilian	-1
Surprise attack	+1
For every figure helping	+1
Combat engineer, Pioneer	+2



(1) If a German tank has this piece on the Turret or deck, then it has a Nahverteidigungswaffe, a weapon to launch smoke bombs, flares or against close assaulting infantry.

31.9.1. Close Quarter; blinding the enemy Tank

Pioneers, troops in built-up areas, farms or defensive earthworks may try to blind an enemy tank using improvised measures. In this case, instead of "damaging" the enemy tank, they can "blind" the enemy tank for as many impulses as damage points infringed.

31.10. Mortar fire against armored vehicles

When an armored vehicle receives mortar fire, roll a die. A result of one means that one of the rounds exploded on the deck the tank.

A result of two means that one of the rounds hit the turret top. If the tank is carrying passengers, apply the effects without any modifier.

Tank destroyers with open turrets and SPG that receive a mortar impact in the turret must check for all the turret crew with a D-1.

31.11. Grenade fire against tanks

The only way a figure can throw a grenade in an open tank (usually SPGs) directly (without the need to throw a die) is when the figure is in contact with the vehicle.

31.12. Ramming and crashing

When two objects collide, both receive damage, depending on the speed they were travelling before the collision and the nature of both objects.

The damage each of these objects will receive is translated into the usual format "XD(Y)" where the X is the number of dice, and Y the Severity of Damage.

The number of dice depends on the collision speed. If two objects collide against each other while one of them moves at 10" and the other one at 30", the collision speed will be 40. The number of dice will always be the Collision Speed divided by ten, rounded down. So, in this case, it will be four. And if one object collides from the back, when it was moving at 10" by another object moving at 30", the Collision speed will be 20".

And the Severity of the Damage received by each object will depend on the nature of the other object and is listed in the following table.

DAMAGE SEVERITY BY CRASH	
Object	Damage
Rubber boats, humans	D(0)
Gliders, cattle, horses, furniture, piled assorted stuff used as barricade	D(1)
Trucks, cars, planes, wooden boats and wooden walls, hedges, sandbags	D(2)
APC, IFV, brick walls, log walls, metallic boats, trees, tanks (less than 10 tons)	D(3)
AFV, thick brick walls, stone fences, tanks (between 10 and 25 tons)	D(4)
Concrete, rocks, ground, seabed, water surface, tanks (more than 25 tons)	D(5)
Fortification (may have multipliers, see 20.1.4 on page 91)	D(6)

A PzIV tries to break a barricade built with a bus, crashing at 12" per impulse. The number of dice will be one (12/10 rounded down). The PzIV will receive 1D(2) and the bus, 1D(4).

The Damage Points produced by collisions first apply to all the crew members and passengers of the vehicles. Therefore in the previous example, the first Damage Points will be used up on the crew and the remainder, if any, to the other systems.

31.13. Clearing Roadblocks

An armored can clear obstacles or a road block or barricade using a controlled Ramming.

The Resistance of a blockade or barricade depends on its length (in inches) multiplied by its Damage (defined at the DAMAGE SEVERITY BY CRASH table).

The player simply needs to apply enough speed to push the blockade without risking the vehicle.

The blockade is cleared by inches.

31.14. Soft terrain and Ground Pressure

Every land vehicle has a Ground Pressure value in its Data Card. This is the pressure it exerts against the ground. When the ground can not bear such pressure, the vehicle may reduce its speed, or in an extreme situation, it may bog down.

Normal values for tanks could be 0.7 for a T-34 up to 1 for a Tiger.

The ground bearing pressure depends on many factors, but we will use this simple table:

GROUND BEARING PRESSURE	
Terrain type	GBP
Cemented Sand, gravel	0.7
Plowed or loose soil	0.6
Coarse gravel	0,5
Coarse sand; Snow	0,3
Silt	0,2
Clay	0,1

When a vehicle enters soft terrain, the Quality of the driver is as important as the Ground Pressure of the vehicle. In fact, we reduce the GP of the vehicle by 0.1 per Quality point of the driver, so a Tiger with a Quality four driver will behave like a tank with a GP of 0.6 (1 - 0.4).

However, when this vehicle is moving over terrain with a GBP lower than the Effective GP (the GP of the vehicle modified by the Quality of the driver, or EGP), the player must face the consequences, and the severity of these consequences depends on the difference between the Ground Bearing Pressure and the Effective Ground Pressure.

CONSEQUENCES OF MOVING ON SOFT TERRAIN	
EGP - GBP	Effect
0.1	Speed -1
0.2	Speed -2
0.3	Speed -3
0.4	Speed -4
0.5	Vehicle Stopped
0.6	Vehicle Bugged Down

The player can try to avoid the consequences rolling a die against the Quality of the driver.

If the Quality check is passed, the effect is ignored. If it fails, the player must apply the next effect (as if the difference was increased by one).

31.15. Fire

Usually, a fire starts due to an explosion, the impact of a Molotov cocktail or the burst of a flame-thrower, and most of the time, its “strength” is determined by a die - the higher the number, the stronger the fire - being two the minimum strength (one means that the fire was put out). We advise you represent this value with a tiny die.

At the start of every turn, the strength of every fire can change. To do so, roll a die for every fire. If the result is higher or equal than the current value, the fire strength is reduced by one. If the result is lower than the current value, the fire strength is increased by one.

If the fire strength is reduced to one, it disappears. If the fire strength reaches the value of six, this means that the fire is out of control and the vehicle has been completely destroyed.

Every fire emits a cloud of smoke each turn of the same value as the original fire.

An already burnt object can not catch fire again.

31.15.1. Putting out fires (Optional)

When a tank is on fire, other troops can help to put out the fire from the exterior using water, sand, spades, fire extinguishers (some tanks usually have an external fire extinguisher), etc. at the cost of one action per figure and attempt. To reduce one point of fire the player must roll a die (applying the corresponding modifier) and get a result higher than the fire value.

FIRE FIGHTING	
Equipment	Mod
Bare hands	-2
Spade, Broom	+1
Sand/Water	+2
Fire extinguishers	+3
Hose	+4

For the tank crew, the situation is worse. Only one of them can use a fire extinguisher, but before they must open all the hatches.

31.16. Artillery rounds; special cases

Some circumstances may affect the behaviour of shells when they hit the target.

31.16.1. HE rounds

HE explosives have a special effect when they hit a vehicle with *Schürtzen* side shields, extra armor, bed springs, sandbags, etc. The simple fact of exploding against the vehicle blows up that protection for that sector for the remainder of the game. HE rounds never bounce.

31.16.2. APC Rounds

If using an APC round, the player rolls more sixes than ones, the round shattered on impact.

31.16.3. Caliber twice the size of relative armor

When the caliber of the projectile is twice the thickness of the relative armor, we have what’s called a “plugging.” This means that the projectile pushes the armor and a “plug” or detached armor is projected inside the vehicle. To represent this, we add half (rounded down) of the dice to the dice we already have.

In this example, the shell caliber is 7,5cm (so 75mm) and the relative armor at the impact point is 35 (this means 35mm), so the caliber is more than twice the relative armor. As we already have four dice, with two more from the “plugging”, we now have a total of six damage dice.

31.16.4. Caliber three times the size of relative armor

When the caliber is three times the size of the relative armor, the projectile will not rebound, even from the worst possible angle. The shell simply pushes, deforms and breaks through the armor. Throw a die; 1, 2, 3 or 4 means that the shell explodes in the process, inside the vehicle; but 5 or 6 means that the shell passes through the whole vehicle killing 1D6-1 crew members.



Effects of a 152mm hit against the 45mm, 25° sloped armor plate of a turret.

31.16.5. Schürzten

Shaped charges do not affect if they hit the Schürzten or bed springs, but on a die roll of 4, 5 or six, the Schürzten is considered destroyed by the impact.

For armor piercing rounds, you will need to roll the dice twice to represent the chance of deflection or premature fuze activation. In this case, roll the dice normally and discard the fails. Only those dice that succeed are the ones you will roll later to hit the vehicle.

31.16.6. Extra armor, sandbags

Simply add some “armor thickness” to the area covered. As in the previous case, you will need to roll the dice twice to represent the chance of deflection or premature fuze activation; roll the dice normally and discard the fails. Only those dice that succeed are the ones you will roll later to hit the vehicle.

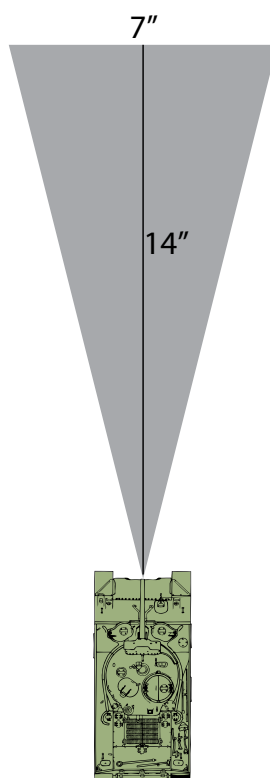
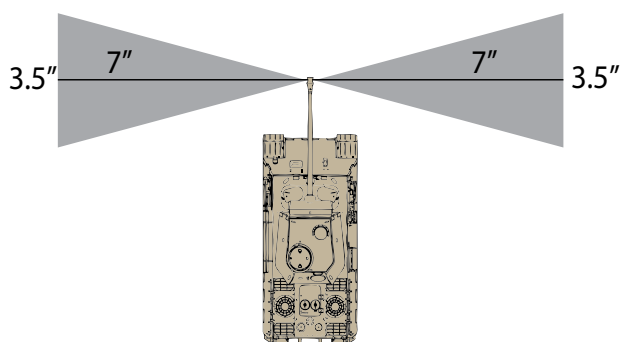
EXTRA ARMOR	
Equipment	Equivalent
Tank riders	1mm each
Wooden log	5mm
Sandbags	8mm
Chain links	10mm
Concrete	20mm

31.17. Muzzle breaks

Muzzle breaks are useful to channel the smoke sideways, allowing the gunner to see the target after the shot. It also helps to reduce the recoil. On the other hand, it increases the dust cloud when firing, and creates a danger zone for the infantry at the sides of the muzzle.

This blast area size depends on the caliber, being the “length” (in inches) the caliber in centimeters, so the “length” of a 57mm blast will be five inches, and the “length” of an 88mm blast will be eight inches. The damage requires, per figure, a roll in the Combat Table with a D+1, applying the modifiers normally.

So, when a gun with a muzzle break fires, it creates two symmetrical blast areas of the according “length” with the width being half of the “length”. The “Size” of the vehicle is tripled for the current and the next impulse for spotting purposes.



When a gun without muzzle break fires, it creates only a blast area just in front of the gun, but twice the “length” and the width being one complete “length”. The “Size” of the vehicle is tripled for the current and the next impulse for spotting purposes.

31.18. Communication between infantry and armored vehicles

Under combat conditions, the cooperation between tank crews and infantry is not easy. The noise and the unit structures create too many problems to share vital information in real time.

In Rattenkrieg!, if you need the support of the tanks for your units on foot, you need to assign a liaison officer or NCO to do this task. This figure must be in base contact with the vehicle to assign objectives to the tank crew.

In this case, to be in base contact doesn't mean Hunkered Down. Only US Infantry or US Marines may use telephone wires to work with the tanks, but only up to 12", and the wire can be cut by HE or hand grenades (it acts like an infantryman, with a modifier or +1; a "Dead" result means the wire was cut).

The other way to do it is using the "15.10. Target Designation" on page 67.

"As early as the Bougainville Island battles during the Solomons Campaign in 1943-1943 crews began making modifications to facilitate coordination between tanks and infantry. Many units devised slightly different variations of the technique but the way the XIV Corps units made the modifications illustrates the basic concept. Armored vehicle crews attached a standard Army field phone to the rear of their vehicles, usually in an empty ammunition can. Then each crew wired the phone into the intercom system of their vehicle. All an infantryman needed to do was pick up the phone to talk to the crew to point out targets or coordinate action. In order to use the phone, infantrymen exposed themselves to run up behind the tank to pick up the phone. Some Southwest Pacific units changed the set up somewhat by trailing a long wire from the tank instead having it terminate at a phone mounted on the rear of the tank. This method allowed the infantrymen to grab the wire from a covered position and attach a phone to effect the communication. American units in Europe created many of the same systems with slight differences as to specific technique. Infantry-tank phones proved to be an effective addition to the protection of armored vehicles."

"Field Expedient Armor Modifications To US Armored Vehicles", Matthew A. Boal, MAJ, USA (AR) B.A., Pennsylvania State University, University Park, PA, 1994, p. 32



31.19. Example of tank encounter

Vehicles in Rattenkrieg! are a combination of crew and machine (with variable "actions" - because of the different number of crew members - but always four "impulses"). Here, a Pz IV (with a crew of five men and a Quality of four) fights against two T-34 (with crews of four, with a Quality of three).

We start when all the Tactical Orders have been placed, and all the tanks are considered Identified and stopped. We will not solve the shots; we are rather focusing on the game sequence and how the tanks work. Here we go.

PzKpfw IV Ausf F1
 Can't pivot. Speed: 10" or 21" (road) per impulse, 90 rounds

VO Tons **22**
 G Pressure **0.8**

Open Hatch

Cmdr
 Loader
 Gunner MG34 D-1(P3R8)
 Driver
 Radio MG34 D-1(P3R8)

Fire

7.5cm KwK 37 L/24 (SHOTS PER TURN: LOADER QUALITY + 3) (GUN SIGHT: 2)												
Shell	Type	Against Armor					Against Other Targets					
		100m	500m	1000m	1500m	2000m	HE	Crater	R4	R3	R2	R1
K.Grat Pz	APCBC	52mm/SD	48mm/SD	45mm/SD	42mm/SD	37mm/SD	1D(3)					
PzGc. 39/1	APCBC	54mm/SD	50mm/SD	47mm/SD	42mm/SD	38mm/SD	1D(3)					
PzGc. 39/2	APCBC	60mm/SD	53mm/SD	50mm/SD	44mm/SD	38mm/SD	1D(3)					
Gc. 38 Hf/C	HEAT	110mm/SD					3D(3)					
SprGr. 34	HE	13mm/SD					6D(5)	D-1(3)	D-1(3)	D(6)	D+1(12)	D+2(19)
Kt. Kw.K	ShrptL	33mm/1D	26mm/1D	23mm/1D	17mm/1D	15mm/1D	3D(2)				D-1(3)	
Nbgr. Kw.K	Smoke											

T-34/76D 1942
 Can't pivot. Speed: 20" or 28" (road) per impulse, 77 rounds

VO Tons **28**
 G Pressure **0.6**

Open Hatch

Cmdr DT
 D(P2R5)
 Loader
 Radio DT
 D(P2R5)
 Driver

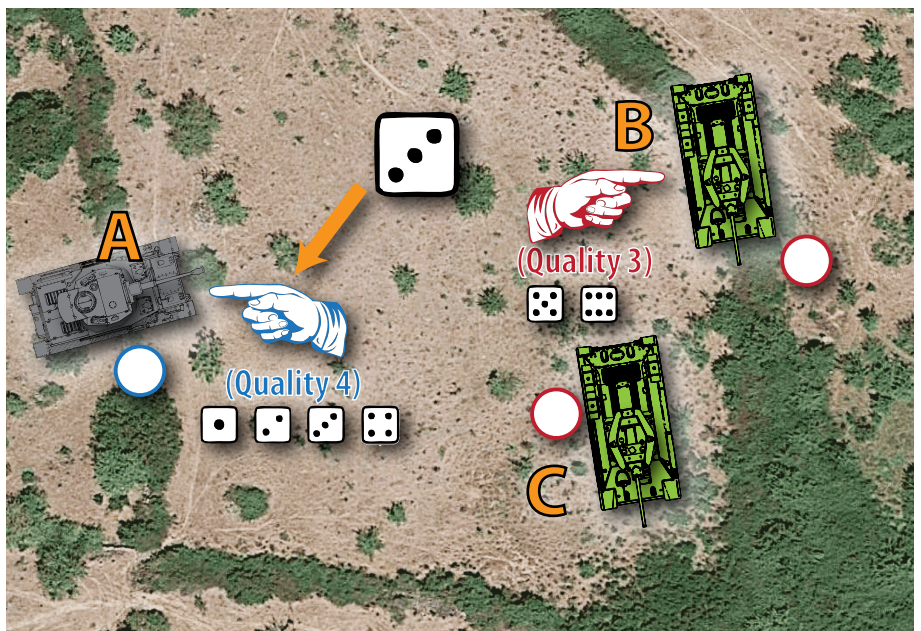
Fire

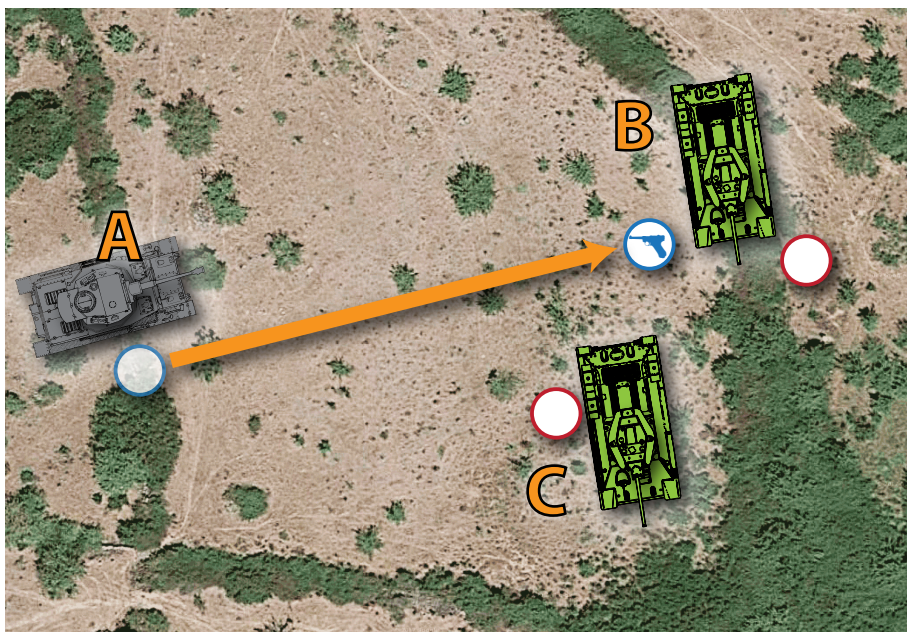
76mm F-34 (SHOTS PER TURN: LOADER QUALITY) (GUN SIGHT: 2)												
Shell	Type	Against Armor					Against Other Targets					
		70" (100m)	500m	1000m	1500m	2000m	Hit	Crater	R4	R3	R2	R1
BR-350A	APHEBC	78mm/4D	71mm/4D	63mm/4D	56mm/4D	50mm/4D	3D(3)					
BR-350B	APHEBC	95mm/4D	87mm/4D	77mm/4D	68mm/4D	60mm/4D	4D(3)					
BR-350P	APCBC	104mm/4D	85mm/4D	69mm/4D	57mm/4D	46mm/4D	1D(3)					
BP-350A	APCR	130mm/4D	92mm/4D	60mm/4D	39mm/4D	26mm/4D	1D(3)					
OF-350M	HE	16mm/8D					8D(5)	D-3(1)	D-1(2)	D(3)	D+1(6)	D+2(18)
BP-350A	HEAT	80mm/8D					8D(5)					

31.19.1. First Phase

Each side nominates one unturned Tactical Order, and the Initiative die is modified by the difference between the elements Leader Quality.

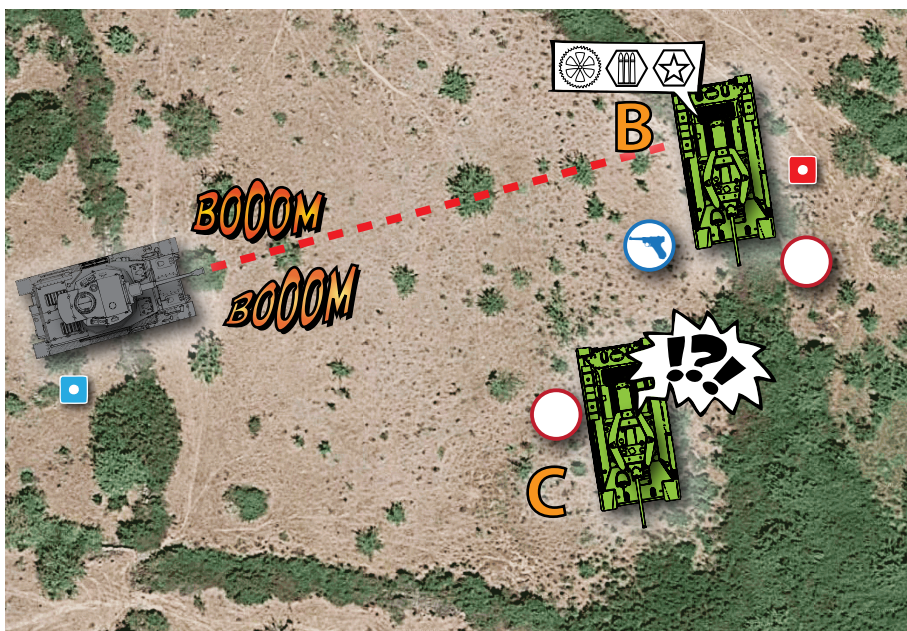
The Blue player chooses to nominate the Panzer IV (element A), the Red one nominates the T-34 (element B). As the quality of the Blue crew is four, and the Red is three, the Blue side will win the Initiative with a die roll between one and four, and the Red one with a result of five or six.





A die roll of three gives the Initiative to the Blue Player. He (obviously) activates his tank.

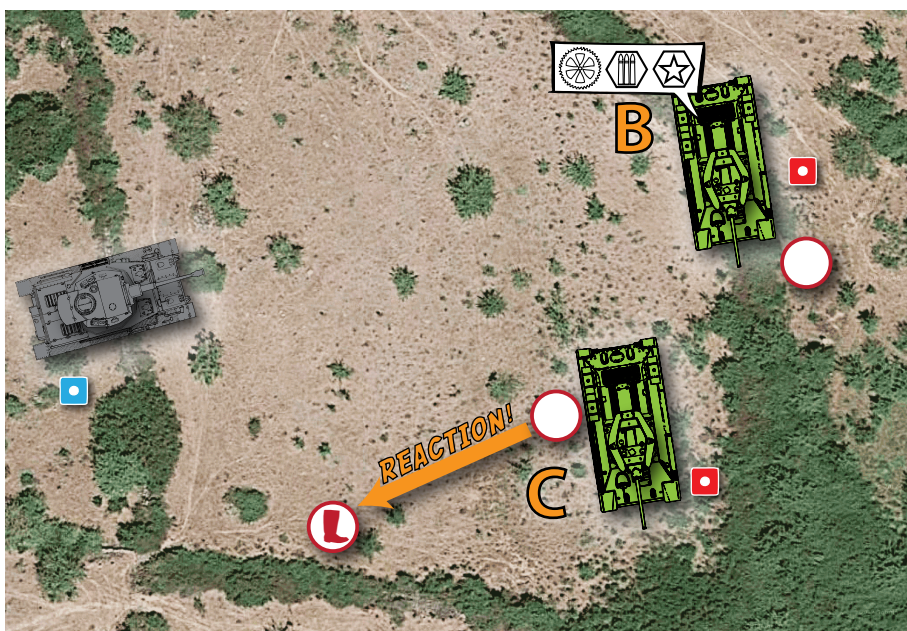
The Blue player turns up the Fire Tactical Order of the element A and places it close to the target he wants to shoot. Then he declares what each crew member of the tank will do this impulse. As the enemy tank is already Identified, the Commander will help the Gunner to aim the shot; the Gunner will fire the gun, and the Loader, to be able to reload after the first shot. These activations mean that they will be “working” for the whole Impulse.



In the attacking Tank Gun data we see that the rate of fire for the 7,5cm KwK L/37 is three shots per turn plus the Gunner Quality (which is four); this gives us seven shots per turn, and this means two in the first three impulses and only one in the last impulse. This is the first impulse of the Blue tank so that it will shot twice.

The shells destroyed the right track of the T-34 and wounded the Driver and the Loader.

Also, the shells “used up” one of the T-34 impulses (as explained in “20.5. Additional Effects of Shells on Enclosed Armored Vehicles” on page 90), and thus the Red player is forced to put a “Used Up Actions Die” close to the tank, showing a one.



With two crew members down, and a track destroyed, this tank could be considered “lost”. However, the other Red T-34 (C) reacts. Its Tactical order was Movement, and the Red player places the Tactical Order where he wants to place the T-34. Because of the reaction, the Red player puts a “Used Up Actions Die” besides the C tank, showing a one.

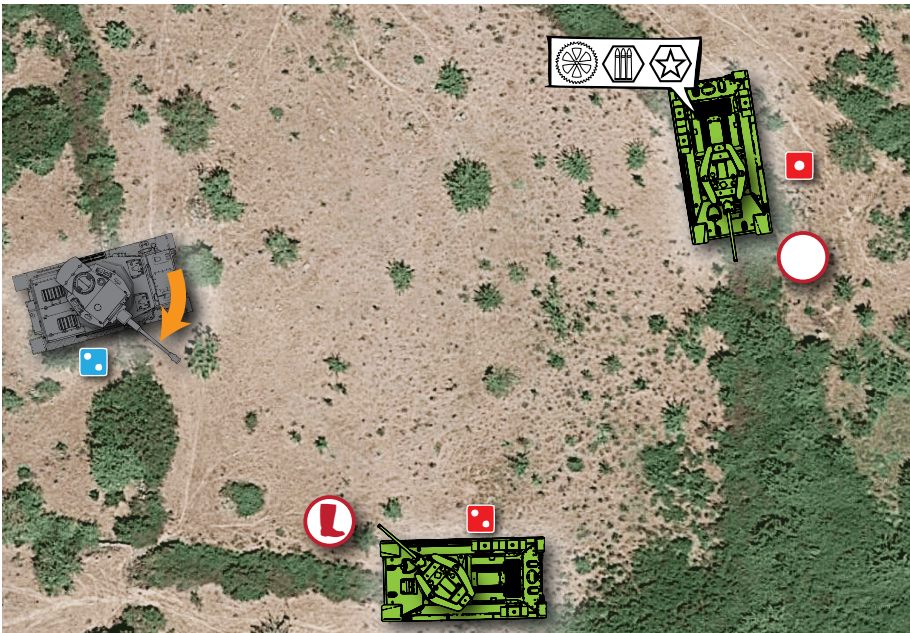
Both players nominate their tanks, but this time, a die roll of five gives the initiative to the Red player. He uses it to move the T-34 in order to attack the Panzer from the flank, and to avoid giving the German the chance to hit him from the rear.

The Red player declares what each crew member of the tank will do this impulse. The Commander (he also doubles as Gunner in the T-34) gives the order to the driver to move, and to turn the turret; the Driver accelerates the T-34 (the tank acceleration is the same as the Driver's Quality), so it can move up to three inches.

In this impulse, the tank will do both things; move and turn the turret. The Red player updates the value shown in the "Used Up Impulses Die" next to the tank; now we see a two.



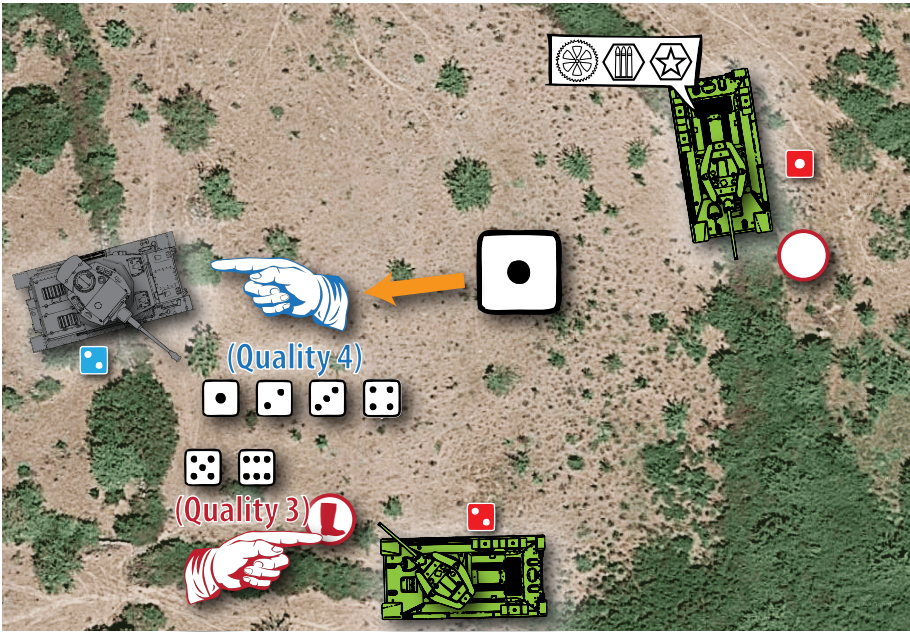
Again Both players nominate their tanks, but this time, a die roll of 5 gives the initiative to the Blue player. He uses the initiative and decides to face the T-34, so he declares that the Gunner turns the turret



The turret faces the T-34 and the Blue player increases by one the “Used Up Impulses Die” to show a two.

The Red player is in a desperate situation. Both tanks are ready to fire at each other, and even with the help of the sloped armor, the T-34 may not survive the fight.

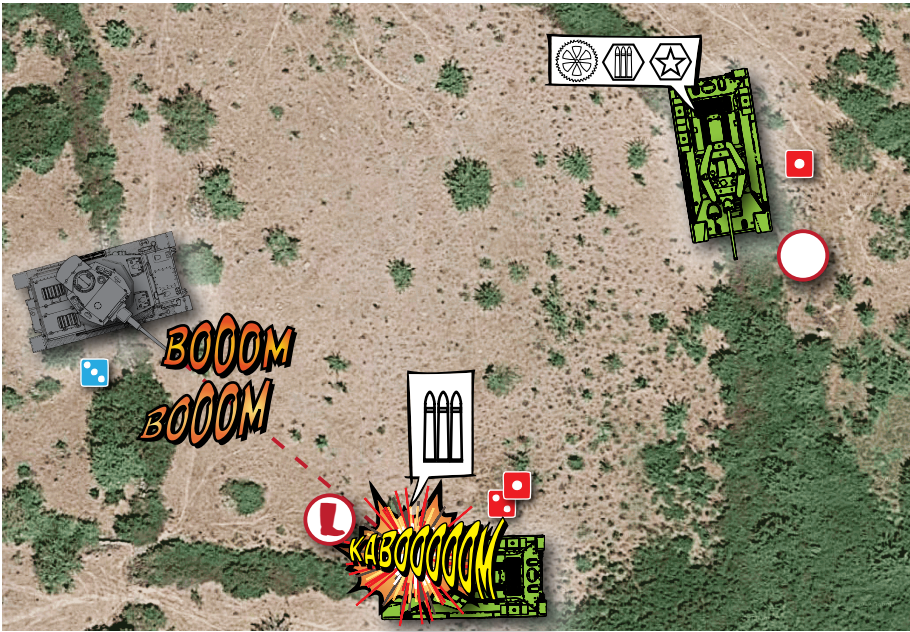
Both players nominate their tanks, but this time, and again, Luck gives the Initiative to the Blue player. And now it can shoot twice against a Red tank. Damage apart, the first shot has the effect of using up the last action of the T-34, which now can't do anything.



Both shells produce several damages, but finally, the T-34 explodes due to an impact to the ammunition propellant.

One T-34 has been destroyed, and the other is out of order and has lost two crew members.

The Blue tank still has one Impulse, but the player decides to end the Round.



32. LIGHT VEHICLES

32.1. The Light Vehicles Data Card

Light vehicles are those which can be destroyed using light weapons or explosives, and they range from cars and motorcycles to trucks, half-tracks and armored cars.

The main difference with the Armored vehicles is that there is no numerical info about the thickness of the armor inside the fan cells. Instead, you will find a sign indicating the protection level against infantry weapons.

- No protection at all
- ◐ Protection against light weapons and fragmentation
- Protection against HMG, light weapons and fragmentation

Keep in mind that some light vehicles have armored turrets, like the BA-6 you can see in the example.

In other cases, these vehicles have been designed to carry troops to the battlefield, or to transport equipment or supplies, to tow artillery pieces or trailers, and for this reason, you may find rows or arrays of squares representing the passengers, and info about the towing capacity of the vehicle.

Amphibian vehicles may have two Data Cards, one for the waterline version, and another one for the version on land. In these cases, the size may vary (because of the submerged part of the vehicle is ignored while in the water), and the "Ground Pressure" (used on land) is substituted by the "Draft" (used on water).

Finally, for each of the different designs of light vehicles, you will find that the "Damage Consequences" are printed on every Data Card.

32.2. The Light Vehicle in motion

The vehicles off road speed is usually closely related to the Driver's Quality. The same applies to acceleration. Deceleration is always twice the acceleration. If in a given moment, a vehicle's acceleration or deceleration is bigger than the allowed, the controlling player must roll a die for damages for every inch in excess. The severity of the damage is shown in the following table.

BA-6
Can't tow. Speed: Driver Quality x 2 (off road) 23" (road) per impulse, 45 rounds

VO Tons **5**
G Pressure **0.4**

DAMAGE CONSEQUENCES

Equipment	Effect
Engine	Every hit halves the speed
Fuel Tank	Leaks, increase Fire chance per hit
Wheels	The vehicle stops

Open Hatch

Cmdr DT D(P2R5)

Loader MG DT D(P2R5)

Driver

45mm ZIS-5 (SHOTS PER TURN: LOADER QUALITY + 3) (GUN SIGHT: 1)

Shell	Type	Against Armor					Against Other Targets					
		100m	500m	1000m	1500m	2000m	HE	Crater	R4	R3	R2	R1
BR-240	AP/HEBC	59mm/2D	45mm/2D	35mm/2D	29mm/2D	26mm/2D	1D(2)					
BR-240SP	AP	68mm/2D	51mm/2D	35mm/2D	25mm/2D	17mm/2D	1D(2)					

○ Protection against light weapons and fragmentation
● Protection against HMG, light weapons and fragmentation

M3 Half-track Personnel Carrier
Can tow 2 tons. Speed: Driver Quality x 3 (off road) 36" (road) per impulse

VO Tons **9**
G Pressure **0.6**

DAMAGE CONSEQUENCES

Equipment	Effect
Engine	Every hit halves the speed
Fuel Tank	Leaks, increase Fire chance per hit
Wheels	The vehicle stops

Driver

Cmdr

DrvAsst. M2HB D-3(P4R5)

Cal.30 D-2(P3R8)

○ Protection against light weapons and fragmentation
● Protection against HMG, light weapons and fragmentation

DAMAGE BY ACCELERATION	
Vehicle	Die Roll
Trucks, cars, boats	D(3)
APC, IFV	D(2)
AFV	D(1)

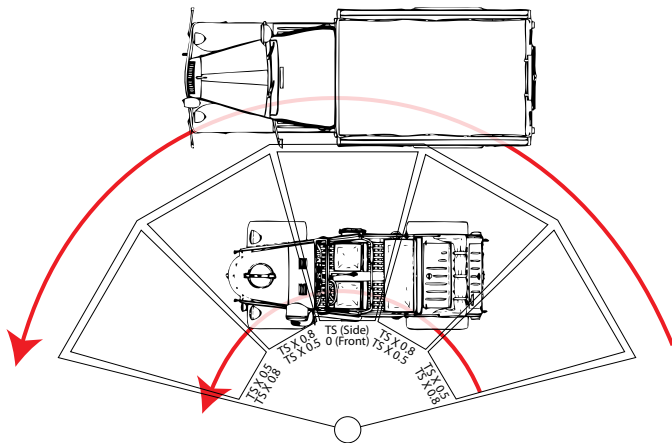
Reverse speed is half of the off-road speed, unless stated otherwise.

32.3. Turning a Light Vehicle

Use the protactor to properly turn cars, trucks, half-tracks and armored cars.

Car sized vehicles always use the internal arc of the protactor. Trucks, vans, half-tracks and armored cars, always use the external arc.

Every 30° turn uses up two inches of the movement allowance. This loss of speed simulates the need to reduce the speed in the turns.



32.4. Joining or leaving a road

When a vehicle leaves the road, the number of unspent inches is divided by two. If this number is greater than the maximum off-road allowance for that vehicle, apply the damages as if it was an excess in acceleration/deceleration.

When a vehicle joins a road, the number of unspent inches is doubled.

32.5. About passengers

Passenger actions are spent at the same rate as the vehicle carrying them spends its actions.

Passengers can disembark from a vehicle, even if they have no actions to do so. The figures are placed inside a radius of less than 4" from the vehicle, but they are considered Hunkered Down.

Passengers can't Hunker Down while onboard.

Passengers falling from a vehicle must roll a die; they will be wounded if the result is equal or less than the vehicle's speed that impulse divided by six.

32.6. About the crew

Dead or wounded crew members can be replaced, by another crew member but this costs two crew actions.

When crew members have to fight as infantry, or carried troops must perform crew duties, their Quality is reduced by two.

Crew members can not Hunker Down while onboard.

32.7. Damage to Light Vehicles

Light vehicles are too soft for armor piercing shots, so when guns fire against a light vehicle or a mine explodes, use the data you will find in the column "Against Other Targets - HE".

Light weapons (and fragmentation grenades) can produce damage to any equipment (including passengers) in light vehicles.

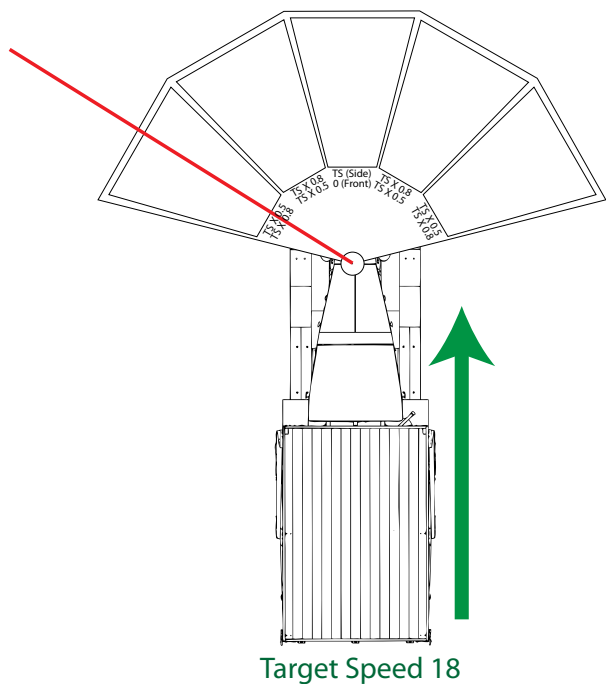
Before shooting against the vehicle, the attacker must declare where he is aiming (engine, passengers, wheels, vision blocks, etc.). Then he rolls a die in the usual Combat Table, and every "Dead" means one damage point.

When a machine gun (or submachine gun) fires against a light vehicle, it may roll as many dice as shown in the "Size" of the corresponding fan cell.

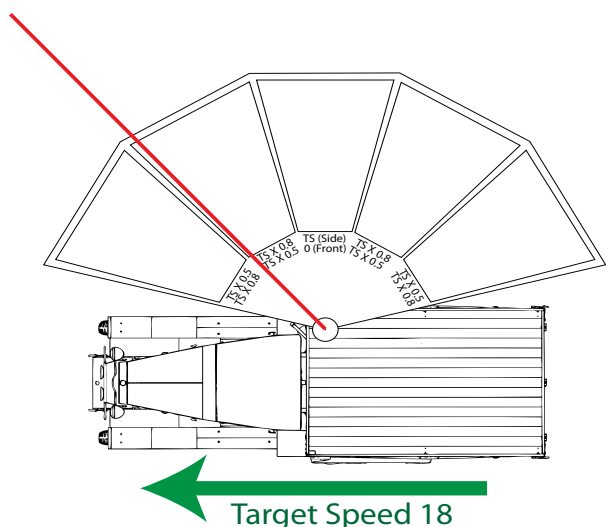
The procedure is the same as in the fire against foot troops, but with an additional modifier; the Relative Speed of the vehicle. For every 5" of Relative Speed, the modifier to the die roll is increased by one.

32.8. Relative speed of Light Vehicles

To know the relative speed of the target, simply multiply the actual speed of the target by the factor written in the corresponding "fan sector".



For example; if a Gaz AA is moving at a speed of 18, and we are trying to hit from the sector indicated by the red line (the thread), we see that the relative speed will be the actual Target Speed (18 in our case) multiplied by 0.8, so it will be fourteen (18 x 0.8 = 14.4). The modifier will be +2.



And the same applies if the target is moving across our line of sight. In this case, the same truck is moving at the same speed as before, 18. Now, the thread tells us that the relative speed of the target will be nine (18 x 0.5 = 9).

Keep in mind that when a vehicle is moving directly towards the gun, or away from the gun, the relative speed will be zero.

32.9. Close quarter combat against Light Vehicles

When foot troops are in physical contact with an enemy vehicle they can try to disable the threads, blind the vision blocks, try to bend the machine gun barrels, block the turret ring, or put something inside the gun, etc.

In an urban setting, most hatches are locked on the inside, so is not so easy for the enemy to open them from the outside to throw in a grenade. The same applies to pistol and vision ports.

For every action and figure chose the equipment you want to damage and roll a die.

CLOSE QUARTER COMBAT AGAINST VEHICLES	
Roll	Effect
1	Attacker dies
2	Attacker wounded
3	No effect
4	No effect
5	Equipment takes one damage point
6	Equipment takes 1D damage points

The following modifiers are added to or subtracted from the result.

CLOSE COMBAT AGAINST VEHICLES MODIFIERS	
Weapon	Modifier
For every 5" of vehicle's Relative Speed	-1
If the vehicle has pistol ports and the crew is alive	-1
Bare Hands	-2
Civilian	-1
Surprise attack	+1
For every figure helping	+1
Combat engineer, Pioneer	+2

32.10. Mortar fire against Light Vehicles

When a light vehicle receives mortar fire, roll a die. A result of one means that one of the rounds exploded inside the vehicle. Apply the effects to the crew and passengers without any modifier.

32.11. Grenade fire against Light Vehicles

The only way a figure can throw a grenade in an open light vehicle directly (without the need to throw a die) is when the figure is in contact with the vehicle.

32.12. Ramming and crashing

When a light vehicle crashes, it receives damage, but it also produces damage in the place/object it hits. The damage depends on the speed they traveled before the collision and the nature of both objects.

The damage each of these objects will receive is translated into the usual format "XD(Y)" where the X is the number of dice, and Y the severity of Damage.

The number of dice depends on the collision speed. If two objects collide against each other while one of them moves at 10" and the other one at 30", the collision speed will be 40. The number of dice will always be the Collision Speed divided into ten, rounded down. So, in this case, it will be four. And if one object collides from the back, when it was moving at 10" by another object moving at 30", the Collision speed will be 20".

And the Severity of the Damage received by each object will depend on the nature of the other object and is listed in the following table.

DAMAGE SEVERITY BY CRASH	
Object	Damage
Rubber boats, humans	D(0)
Gliders, cattle, horses, furniture, piled assorted stuff used as barricade	D(1)
Trucks, cars, planes, wooden boats and wooden walls, hedges, sandbags	D(2)
APC, IFV, brick walls, log walls, metallic boats, trees, tanks (less than 10 tons)	D(3)
AFV, thick brick walls, stone fences, tanks (between 10 and 25 tons)	D(4)
Concrete, rocks, ground, seabed, water surface, tanks (more than 25 tons)	D(5)
Fortification (may have multipliers, see 20.6.4 on page <?>	D(6)

Example: A BA-6 moving at 12" per impulse, collides against a PzIV moving at 12". The Collision Speed is twelve plus twelve, so the number of dice will be two (24/10 rounded down). The BA-6 receives 2D(4) and the PzIV 2D(3).

The Damage Points produced by collisions first apply to all the crew members and passengers of the vehicles. Therefore in the previous example, the first Damage Points will be used up on the crew and the remainder, if any, to the other vehicle systems.

32.13. Clearing Roadblocks

A light vehicle can clear obstacles or a road block or barricade using a controlled Ramming.

The Resistance of a blockade or barricade depends on its length (in inches) multiplied by its Damage (defined at the DAMAGE SEVERITY BY CRASH table).

The player simply needs to apply enough speed to push the blockade without risking the vehicle.

The blockade is cleared by inches.

32.14. Soft terrain and Ground Pressure

Every land vehicle has a Ground Pressure value in its Data Card. This is the pressure it exerts against the ground. When the ground can not bear such pressure, the vehicle may reduce its speed, or in an extreme situation, it may bog down.

The ground bearing pressure depends on many factors, but we will use this simple table:

GROUND BEARING PRESSURE	
Terrain type	GBP
Cemented Sand, gravel	0.7
Plowed or loose soil	0.6
Coarse gravel	0,5
Coarse sand; Snow	0,3
Silt	0,2
Clay	0,1

When a vehicle enters soft terrain, the Quality of the driver is as important as the Ground Pressure of the vehicle. In fact, we reduce the GP of the vehicle by 0.1 per Quality point of the driver.

Even so, when this vehicle is moving over terrain with a GBP lower than the Effective GP (the GP of the vehicle modified by the Quality of the driver, or EGP), the player must face the consequences, and the severity of these consequences depends on the difference between the Ground Bearing Pressure and the Effective Ground Pressure.

CONSEQUENCES OF MOVING ON SOFT TERRAIN	
EGP - GBP	Effect
0.1	Speed -1
0.2	Speed -2
0.3	Speed -3
0.4	Speed -4
0.5	Vehicle Stopped
0.6	Vehicle Bugged Down

The player can try to avoid the consequences rolling a die against the Quality of the driver.

If the Quality check is passed, the effect is ignored. If it fails, the player must apply the next effect (as if the difference was increased by one).

32.15. Fire

Usually, a fire starts due to an explosion, the impact of a Molotov cocktail or the burst of a flame-thrower, and most of the times, its "strength" is determined by a die - the higher the number, the stronger the fire, being two the minimum strength (one means that the fire was put out). We advise you represent this value with a tiny die.

At the start of every turn, the strength of every fire can change. To do so, roll a die for every fire. If the result is higher or equal than the current value, the fire strength is reduced by one. If the result is lower than the current value, the fire strength is increased by one.

If the fire strength is reduced to one, it disappears. If the fire strength reaches the value of six, this means that the fire is out of control and the vehicle has been completely destroyed.

Every fire emits a cloud of smoke each turn of the same value as the original fire.

An already burnt object can't catch fire again.

32.15.1. Putting out fires (Optional)

A fire can be put out with water, sand, spades, fire extinguishers, etc. at the cost of one action per figure and attempt. To reduce one point of fire the player must roll a die (applying the corresponding modifier) and get a result higher than the fire value.

Open vehicles may use extinguishers without any restriction. Closed vehicles must open their hatches before doing so.

FIRE FIGHTING	
Equipment	Mod
Bare hands	-2
Spade, Broom	+1
Sand/Water	+2
Fire extinguishers	+3
Hose	+4

32.16. Bulletproof wheels

A light vehicle may be supplied with latex foam filled wheels. These wheels may stand light weapons fire, and most of them even a direct hit of a 37mm APC projectile. The drawback is that the maximum speed is limited to 20" per impulse.

If the player wants to use these kind of wheels, he must write down which vehicles are equipped with them. They will ignore any damage produced by light weapons, but their maximum speed will never exceed 20" per impulse.



33. BOATS AND LANDINGS

BK-2 D-Type Armored Motor Gunboat

Speed: 4"

V0
Tons
6
Draught
0.7

DAMAGE CONSEQUENCES	
Equipment	Effect
Engine	Every hit halves the speed
Fuel Tank	Leaks, increase Fire chance per hit
Wheels	The vehicle stops
Buoyancy	Every 10 points lost, speed reduced by 1"

Coxswain	1	1	2
Bow Gunner Maxim D-1(P3R5)			
Sailor Mosin D-2(P3)			
Sailor Mosin D-2(P3)			
Sailor Mosin D-2(P3)			
Sailor Mosin D-2(P3)			
Stern Gunner DshK D-3(P4R6)			

No protection at all
 Protection against light weapons and fragmentation
 Protection against HMG, light weapons and fragmentation

33.1. The Boats Data Card

Boats are simply a subset of unarmored vehicles, and most of them can be destroyed using light weapons or explosives. They range from rubber rafts to boats, barges, landing crafts, trawlers to gunboats.

As the Unarmored vehicles, there is no numerical info about the thickness of the armor inside the fan cells. Instead, you will find a sign indicating the protection level against infantry weapons.

- No protection at all
- Protection against light weapons and fragmentation
- Protection against HMG, light weapons and fragmentation

Keep in mind that some boats may have armored turrets.

In many cases, these crafts have been designed to carry troops or to transport vehicles or supplies. For this reason, you may find rows or arrays of squares representing the passengers, and info about the payload of the vehicle.

Boat Data Cards have no "Ground Pressure." Instead, they show the "Draft" of the boat, in meters.

Finally, given the diversity of boat designs and purposes, you will find that the "Damage Consequences" are printed on every Data Card.

DB Black Sea Landing Craft

Payload: Vehicles, 3 tons, general cargo, 4 tons. Speed: loaded 8", empty 11".

V0
Tons
8
Draught
0.6

DAMAGE CONSEQUENCES	
Equipment	Effect
Engine	Every hit halves the speed
Fuel Tank	Leaks, increase Fire chance per hit
Wheels	The vehicle stops
Buoyancy	Every 10 points lost, speed reduced by 1"

Coxswain (Fr. Shielded)		
Bowman		
Sternman		

No protection at all
 Protection against light weapons and fragmentation
 Protection against HMG, light weapons and fragmentation

33.2. The boat in motion

The boat max speed depends on the load carried. For landing crafts, there are two speeds, "Loaded" and "Empty". For combat crafts, there is only one speed. However, some exotic crafts, powered by airplane engines may have a "Minimum" and a "Maximum" speed, and rowing and sailing boat speeds may depend on other factors, like prevailing wind and the number of men rowing.

The acceleration and the deceleration are the Quality of the Coxswain, in inches. If in a given moment, a vehicle's acceleration or deceleration is bigger than the allowed, the controlling player must roll a die for damages for every inch in excess. The severity of the damage is shown in the following table.

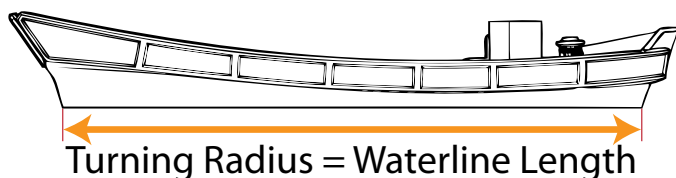
DAMAGE BY ACCELERATION	
Boat type	Die Roll
Rubber boats	D(3)
Wooden, aluminum	D(2)
Steel	D(1)

Reverse speed is the same as the normal one, unless stated otherwise.

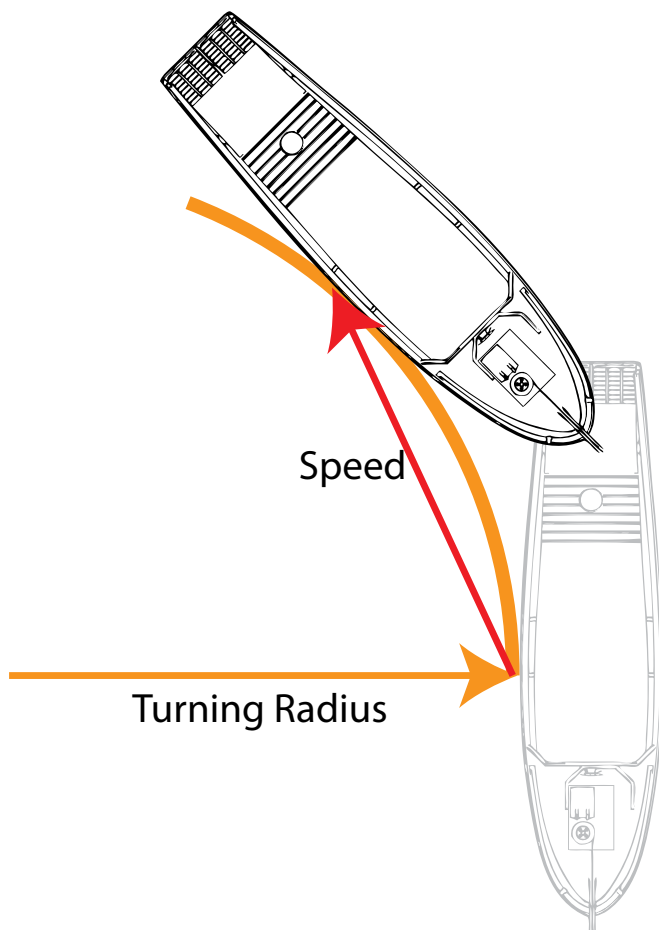
33.3. Turning a boat

For rowing boats and landing crafts with two engines, the turning radius is given by the current speed.

For boats with only one engine, the turning radius is given by the boat Waterline Length.



The Waterline Length is the length on the waterline where the ship happens to float.



33.4. About passengers

Passenger actions are spent at the same rate as the vehicle carrying them spends its Impulses.

Passengers can disembark from a boat, even if they have no actions to do so. The figures are placed inside a radius of less than 4" from the boat but they are considered stunned.

Passengers can't Hunker Down while onboard.

33.5. About the crew

Dead or wounded crew members can be replaced, but this costs two crew actions.

When crew members have to fight as infantry, or carried troops must perform crew duties, their Quality is reduced by two.

Crew members can't Hunker Down while onboard.

33.6. Damage to boats

Unarmored vehicles are too soft for armor piercing shots, so when a gun fires against an unarmored vehicle or a mine explodes, use the data you will find in the column "Against Other Targets - HE".

Light weapons (and fragmentation grenades) can produce damage to any equipment (including passengers) in unarmored vehicles.

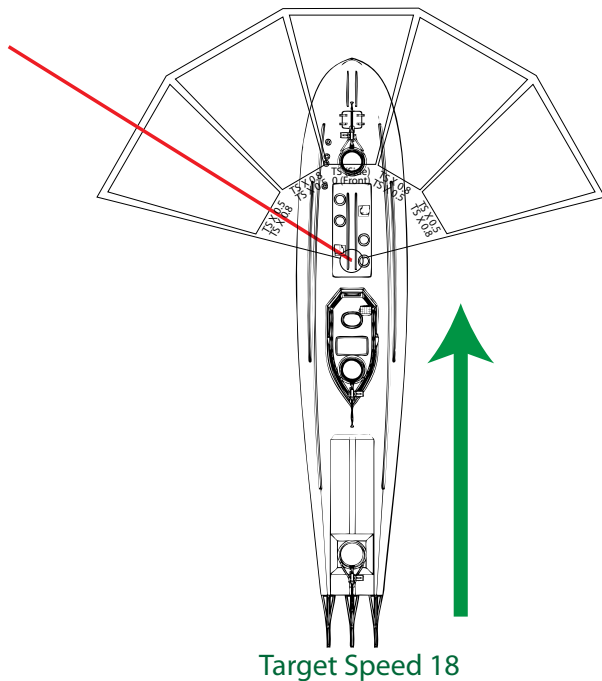
Before shooting against the vehicle, the attacker must declare where he is aiming (engine, passengers, hull, etc). Then he rolls a die in the usual Combat Table, and every "Dead" means one damage point.

When a machine gun (or submachine gun) fires against an unarmored vehicle, it may roll as many dice as shown in the "Size" of the corresponding fan cell.

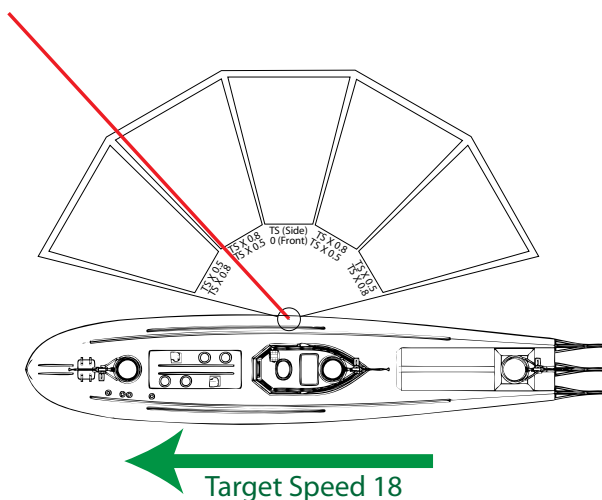
The procedure is the same as in the fire against foot troops, but with an additional modifier; the Relative Speed of the vehicle. For every 5" of Relative Speed, the modifier to the die roll is increased by one.

33.7. Relative speed of a boat

To know the relative speed of the target, simply multiply the actual speed of the target by the factor written in the corresponding “fan sector”.



For example; if a G-5 is moving at a speed of 18, and we are trying to hit from the sector indicated by the red line (the thread), we see that the relative speed will be the actual Target Speed (18 in our case) multiplied by 0.8, so it will be fourteen (18 x 0.8 = 14.4). The modifier will be +2.



And the same applies if the target is moving across our line of sight. In this case, the same torpedo boat is moving at the same speed as before, 18. Now, the thread tells us that the relative speed of the target will be nine ($18 \times 0.5 = 9$).

Simply keep in mind that when a boat is moving directly towards the gun, or away from the gun, the relative speed will be zero.

33.8. Buoyancy

The most critical damage on a boat is when the hull is pierced and the water starts to enter much faster than the bilge pumps can handle.

Each damage in buoyancy does not mean that the boat took on a certain amount of water, what it means is the amount of water that will enter the boat each turn.

While the engines are up and running, the bilge pumps will be bailing as much water as the engine points, so if your boat received six buoyancy damage points, and your two engines show three points each, your bilge pumps will keep your boat afloat.

Another way to compensate the increasing loss of buoyancy is to throw load or even passengers overboard. One buoyancy point equals one man and ten equals one ton.

Load thrown overboard is considered lost. Men who jump overboard lose their weapons and equipment, but they can stay afloat, or swim (“7.4.27. Swimming” on page 31).

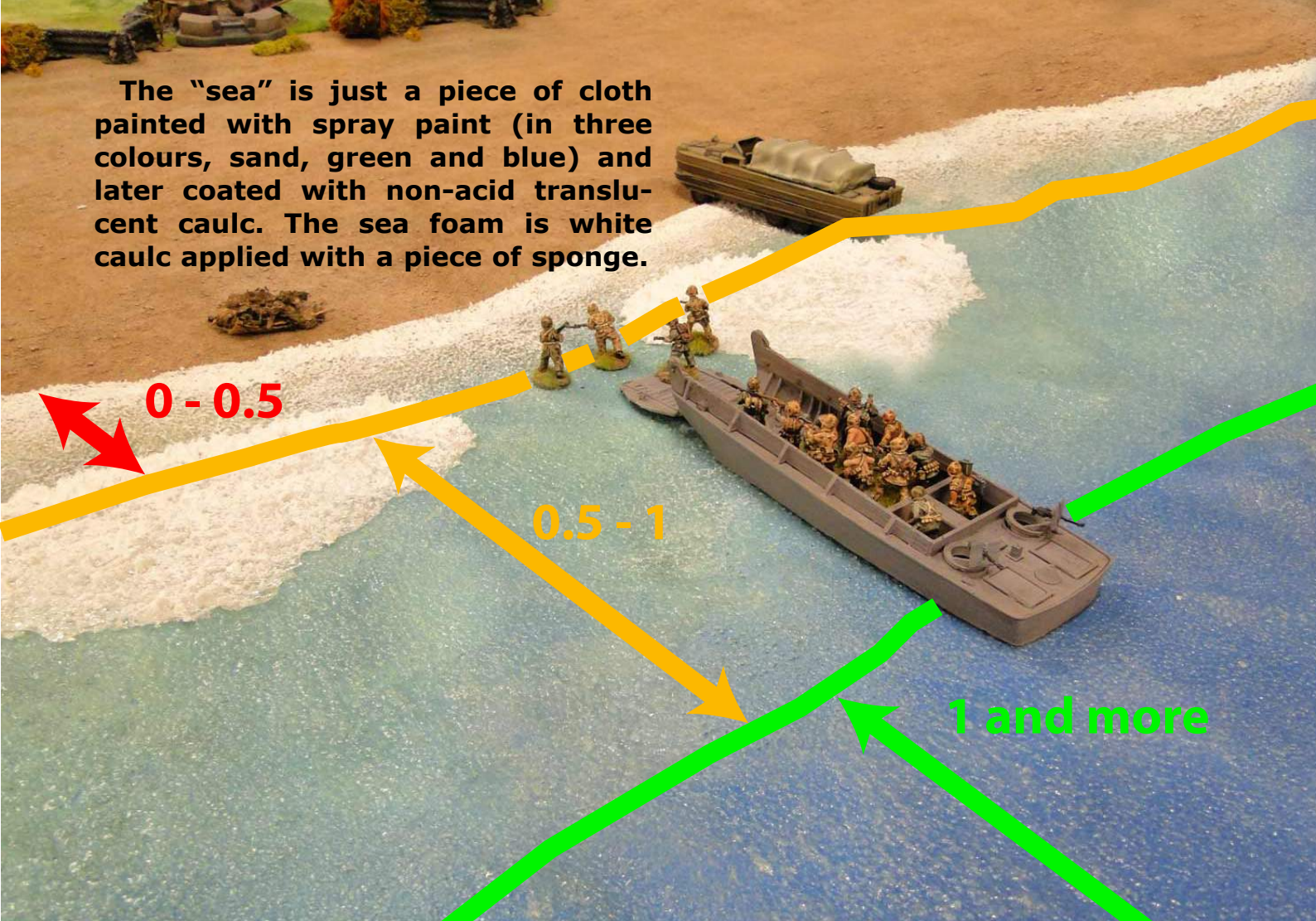
33.9. Artillery against boats

When shooting against landing crafts and small boats, keep in mind that direct fire is not very effective, due to the light armor of the crafts, so probably an anti tank shell will only pierce the hull and a few poor soldiers.

33.10. Mortar fire against boats

The best weapon against small crafts is mortar. The lighter, the better, because 81mm shells most of the time pierce the bottom of the craft, exploding when they hit the seabed. Of course, this could

The "sea" is just a piece of cloth painted with spray paint (in three colours, sand, green and blue) and later coated with non-acid translucent caulk. The sea foam is white caulk applied with a piece of sponge.



be perfect when they are close to the shore. Often 50mm mortar shells work fine because they explode as soon as they hit the deck of the boat, killing passengers and crew.

When a boat receives mortar fire, roll a die. A result of one means that one of the rounds exploded inside the boat. Apply the effects first to the hull (buoyancy) and then to the crew and passengers without any modifier.

As stated above, mortar shells bigger than 60mm will not explode when hitting the boat, they will just make a hole, exploding when the shell hits the seabed.

33.11. Grenade fire against boats

The only way a figure can throw a grenade in an open boat directly (without the need to throw a die) is when the figure is in contact with the boat.

33.12. Ramming and crashing

When a boat crashes, rams or is rammed, or is grounded it receives damage, but it also produces damage in the place/boat it hits; both receive damage, depending on the speed they were travelling before the collision and the nature of both objects.

The damage each of these objects will receive is translated into the usual format "XD(Y)" where the X is the number of dice, and Y the Severity of Damage.

The number of dice depends on the collision speed. If two objects collide against each other while one of them moves at 10" and the other one at 30", the collision speed will be 40. The number of dice will always be the Collision Speed divided by ten, rounded down. So, in this case, it will be four. And if one object collides from the back, when it was moving at 10" by another object moving at 30", the Collision speed will be 20".

The Severity of the Damage received by each object will depend on the nature of the other object and is listed in the following table.

DAMAGE SEVERITY BY CRASH	
Object	Damage
Rubber boats, humans	D(0)
Gliders, cattle, horses, furniture, piled assorted stuff used as barricade	D(1)
Trucks, cars, planes, wooden boats and wooden walls, hedges, sandbags	D(2)
APC, IFV, brick walls, log walls, metallic boats, trees, tanks (less than 10 tons)	D(3)
AFV, thick brick walls, stone fences, tanks (between 10 and 25 tons)	D(4)
Concrete, rocks, ground, seabed, water surface, tanks (more than 25 tons)	D(5)
Fortification (may have multipliers, see 20.6.4 on page <?>)	D(6)

Example: A BK-2 moving at 4" per impulse, collides frontally against a DB Landing Craft moving at 8" per impulse. The Collision Speed will be four plus eight divided into ten (so the number of dice will be only one [12/10 rounded down]). The BK-2 receives 1D(3) and the DB Landing Craft, the same 1D(3).

The Damage Points produced by collisions first apply to all the crew members and passengers of the vehicles. Therefore in the previous example, the first Damage Points will be used up on the crew and the remainder, if any, to the other boat systems.

33.13. Draft and Landing

As we explained before, Boat Data Cards have no "Ground Pressure." Instead, they show the "Draft" of the boat, in meters. So we designed a three color scheme to identify the seabed depth while playing.

The deepest part (one meter or more) is blue; most of the coastal boats can operate there safely.

Men landed in this area will move only 3" per action.

The next part is greenish, and it goes from one meter to 0.5m. Some boats may be grounded if handled carelessly. If the Draft of the boat is dangerously close to the point where the boat could be grounded, check the coxswain Quality to see if the boat is stuck in the seabed. Check for deceleration or crash where necessary.

Troops landed in this area will be unable to run.

The last part is too shallow for all boats but rubber and landing crafts. If the boat does not have a stern anchor, the player should roll a die against the Quality of the coxswain in order to know if the boat is stuck on the beach.

Troops landed here can move normally.

33.14. Fire on board

Usually, a fire starts due to an explosion or the impact of a shell, and most of the time, its "strength" is determined by a die - the higher the number, the stronger the fire - being two the minimum strength (one means that the fire was put out). We advise you represent this value with a tiny die.

At the start of every turn, the strength of every fire can change. To do so, roll a die for every fire. If the result is higher or equal to the current value, the fire strength is reduced by one. If the result is lower than the current value, the fire strength is increased by one.

If the fire strength reduces to one, it disappears. If the fire strength reaches the value of six, this means that the fire is out of control and the boat has been completely destroyed.

Every fire emits a cloud of smoke each turn of the same value as the original fire.

An already burnt boat can't catch fire again.

33.14.1. Putting out fires (Optional)

A fire can be put out with water, sand, spades, fire extinguishers, etc. at the cost of one action per figure and attempt. To reduce one point of fire, the player must roll a die (applying the corresponding modifier) and get a result higher than the fire value.

Open boats may use extinguishers without any penalization.

FIRE FIGHTING	
Equipment	Mod
Bare hands	-2
Spade, Broom	+1
Sand/Water	+2
Fire extinguishers	+3
Hose	+4

34. AIRPLANES

Henschel HS-123 Ground Attack

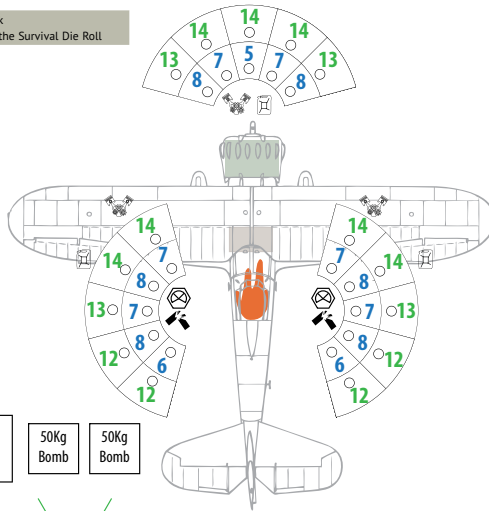
Speed: 30"-171". Acceleration: Pilot Quality x 3; Brake: Pilot Quality x 2. Dive Bomber
Aluminum Aircraft (the A-1 has a partially fabric covered upper wing).

VO
Tons
2
G.Pressure
0.3

DAMAGE CONSEQUENCES	
Equipment	Effect
Structure	Every hit increases in 10" the turning radius Every 5 hits adds 1 to the Landing Die Roll
Fuel	Fire Check
Engine	Additional "Fire" Check Every hits adds 1 to the Survival Die Roll



Pilot
2xMG17
XB-1(P3)(R12)
(P4) Using Smk L AP



50Kg Bomb
50Kg Bomb
250Kg Bomb
50Kg Bomb
50Kg Bomb



AERIAL BOMBS								
Device	Type	Against Armor	Against Other Targets					
			Hit	Crater	R-4	R-3	R-2	R-1
50Kg Aerial Bomb	HE	251mm/160D	15D(5)	D-3(8)	D-2(11)	D(15)	D+1(27)	D+2(80)
250Kg Aerial Bomb	HE	1251mm/800D	26D(5)	D-3(13)	D-2(20)	D(26)	D+1(47)	D+2(137)

- No protection at all
- ◐ Protection against light weapons and fragmentation
- Protection against HMG, light weapons and fragmentation

34.1. The Airplanes Data Card

As with boats, Airplanes are simply a subset of light vehicles, and most of them can be damaged or destroyed using light weapons. They range from gliders to ground attack planes and dive bombers.

When there are engine-powered airplanes in a scenario, at the start of the Engagement Phase, the player that controls the plane must place a marker that represents their entry point and declares the distance, its speed and altitude. From that moment on, the planes are considered Located and can be fired upon.

Glider markers are placed the same turn they enter the game table, and the player declares the distance, speed and altitude. The enemy player must spot the gliders in order to be able to shoot against them.

As light vehicles, there is no numerical info about the thickness of the armor inside the fan cells. Instead, you will find a sign indicating the protection level against infantry weapons.

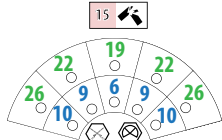
- No protection at all
- ◐ Protection against light weapons and fragmentation
- Protection against HMG, light weapons and fragmentation

DFS-230 A-1

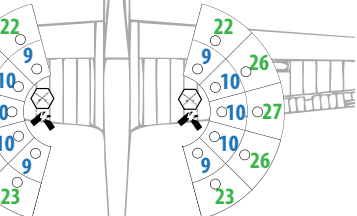
Payload: general cargo, .3 tons. Speed: 24"-95".
Acceleration: Pilot Quality; Brake: Pilot Quality. Lands in 24" (parachute brake)
Fabric Covered Aircraft

VO
Tons
2
G.Pressure
0.3

DAMAGE CONSEQUENCES	
Equipment	Effect
Structure	Every hit increases in 10" the turning radius Every 5 hits adds 1 to the Landing Die Roll



Pilot



- No protection at all
- ◐ Protection against light weapons and fragmentation
- Protection against HMG, light weapons and fragmentation

Keep in mind that some airplanes may have tail gunners, etc.

In some cases, these crafts have been designed to carry troops or to transport cargo. For this reason, you may find rows or arrays of squares representing the passengers, and info about the payload of the plane.

Airplanes have "Ground Pressure" data.

Finally, given the diversity of airplane designs and purposes, you will find that the "Damage Consequences" are printed on every Data Card.

34.2. The airplane in motion

Planes have always an implicit Movement Tactical Orders on them and they must move (and fire) every turn.

Planes can fly as long as their speed is between the minimum and maximum shown in the Data Card.

The acceleration and the deceleration depend on each model, so you will find it in each Data Card.

To land or to take off, the speed must be exactly the minimum.

If in a given moment, a plane acceleration or deceleration is bigger than the allowed, the controlling player must roll a die for damages for every inch in excess. The severity of the damage is shown in the following table.

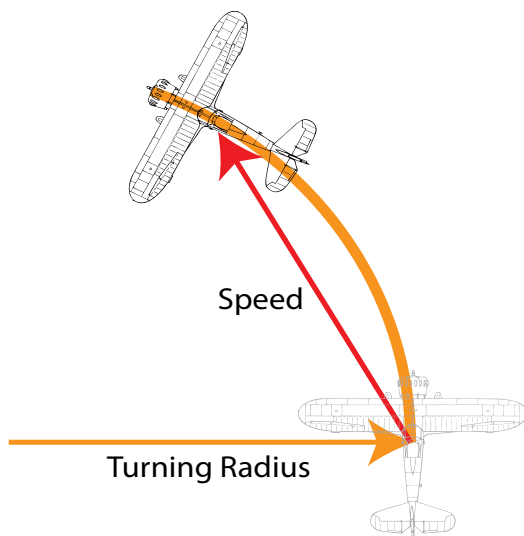
DAMAGE BY ACCELERATION	
Boat type	Die Roll
Wooden/Fabric Aircrafts	D(3)
Aluminum Aircrafts	D(2)

Planes are not affected by wind (simply because our goal is to be able to use ground attack planes with the game, and we want to keep this part of the game interesting but simple).

Unless the game is played on a very small scale (1:300 or 1:600), the plane speed is normally extremely high and most of the time the planes start to play before entering the table, and exit the table the same Impulse they enter it.

34.3. Turning an airplane

The turning radius of an airplane is given by the current speed but can be increased by damage.



Keep in mind that if you are flying slow enough to turn while on the game table, you will attract enemy fire. Lots of enemy fire.

34.4. About passengers

Passenger actions are spent at the same rate as the plane carrying them spends its impulses.

Passengers can disembark from a landed plane, even if they have no actions to do so. The figures are placed inside a radius of less than 4" from the plane but they are considered stunned.

Passengers can't Hunker Down while onboard.

34.5. About the crew

Dead or wounded crew members can be replaced, but this costs two crew actions.

When crew members have to fight as infantry, or carried troops must perform crew duties, their Quality is reduced by two.

Crewmembers can't Hunker Down while onboard.

34.6. Damage to airplanes

Airplanes are too soft for armor piercing shots, so when a gun fires against an airplane, use the data you will find in the column "Against Other Targets - HE".

Only AA guns and light weapons can fire against flying airplanes.

Light weapons (and fragmentation grenades) can produce damage to any equipment (including passengers) in airplanes.

The fire from light weapons and AA guns can not be aimed against a specific part of the airplane.

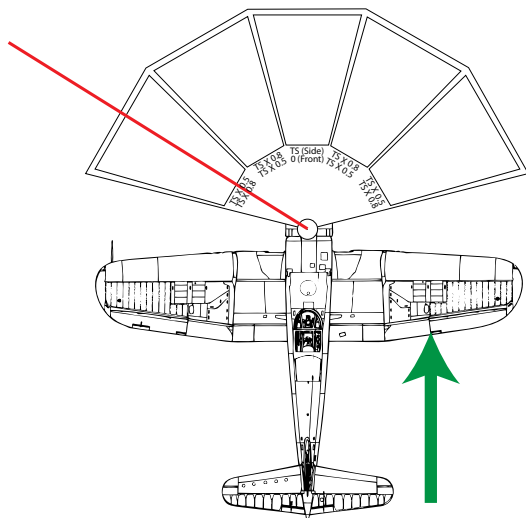
The player rolls the dice in the usual Combat Table, and every "Dead" means one damage point to any system present in the corresponding fan sector.

When a machine gun (or submachine gun) fires against an airplane, it may roll as many dice as shown in the "Size" of the corresponding fan cell.

The procedure is the same as in the fire against foot troops, but with an additional modifier; the Relative Speed of the plane For every 50" of Relative Speed, the modifier to the die roll is increased by one.

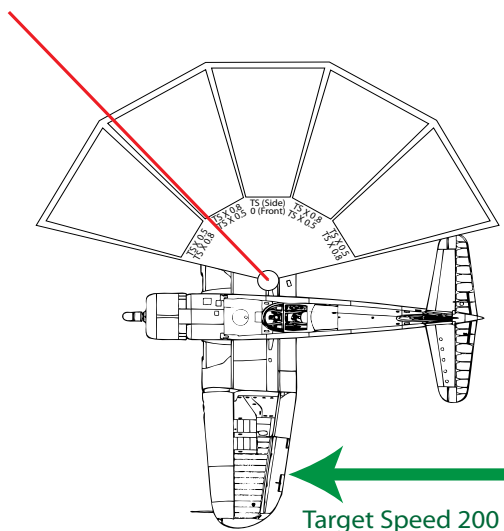
34.7. Relative speed of a plane

To know the relative speed of the target, simply multiply the actual speed of the target by the factor written in the corresponding “fan sector”.



Target Speed 200

For example; if a Vought Corsair II is moving at a speed of 200, and we are trying to hit from the sector indicated by the red line (the thread), we see that the relative speed will be the actual Target Speed (200 in our case) multiplied by 0.8, so it will be fourteen ($18 \times 0.8 = 160$). The modifier will be +3



Target Speed 200

The same applies if the target is moving across our line of sight. In this case, the same ground attack plane is moving at the same speed as before, 200. Now, the thread tells us that the relative speed of the target will be nine ($200 \times 0.5 = 100$).

Keep in mind that when an airplane is moving directly towards the gun, or away from the gun, the relative speed will be zero.

34.8. Structure

The structure is critical for the plane, and every projectile that damages the airframe weakens the plane, and reduces its maneuverability and the survivalness of the machine and her crew.

Keeping in mind the scope of the game, most of the time a damaged plane will be able to leave the battleground, but it will crash later somewhere. For this reason we created the Survival Die Roll and the Landing Die Roll.

34.9. Survival Die Roll

Every plane starts with a Survival Die Roll of zero, unless stated otherwise in the scenario.

This Survival Die Roll is increased when the plane receives damage in some systems.

When the game ends, if the Survival Die Roll of a plane is greater than zero, the controlling player of that airplane must roll a die, if the result is less or equal to the Survival Die Roll, the aircraft crashed before returning home.

34.10. Landing Die Roll

When a plane/glider lands on the game table, the controlling player of the airplane must roll a die to know if the landing was successful.

The basic value is the Quality of the pilot, but some circumstances may affect the landing, and the Landing Die Roll is one of them; the Visibility Condition is another factor, and the ground condition is the last one. All these factors are added to the die rolled by the player.

A plane lands successfully if the result of the die roll is equal or less than the Quality of the pilot. A fail means that the plane crashed.

When a plane crashes, all the crew members and passengers must roll a die on the Combat Table.

For example, a Quality four pilot is trying to land a DFS-230 glider before dawn (Visibility Condition of two) and with a Landing Die Roll (due to structural damage) of one. The ground is ok. This means that the player will need to get a one to land successfully.

34.11. Artillery against landed airplanes

When shooting against landed airplanes or gliders keep in mind that direct fire is not very effective, due to the lightweight of the materials, so probably some projectiles will only pierce the fuselage and maybe a few poor soldiers.

34.12. Mortar fire against landed airplanes

When a landed airplane receives mortar fire, roll a die. A result of one means that one of the rounds exploded inside the aircraft. Apply the effects to the crew and passengers without any modifier.

34.13. Grenade fire against landed aircrafts

The only way a figure can throw a grenade in an open aircraft directly (without the need to throw a die) is when the figure is in contact with it.

34.14. Crashing

When an airplane crashes it receives damage, but it also produces damage in the place/object it hits.

Both will receive damage, depending on the speed the aircraft was flying before the collision and the nature of both objects. The damage each of these objects will receive is translated into the usual format "XD(Y)" where the X is the number of dice, and Y the Damage Severity.

The number of dice depends on the collision speed. The number of dice will always be the Collision Speed divided into ten, rounded down. So, in this case, it will be four. And the Damage Severity received by each object will depend on the nature of the other object and is listed in the following table.

DAMAGE SEVERITY BY CRASH	
Object	Damage
Rubber boats, humans	D(0)
Gliders, cattle, horses, furniture, piled assorted stuff used as barricade	D(1)
Trucks, cars, planes, wooden boats and wooden walls, hedges, sandbags	D(2)
APC, IFV, brick walls, log walls, metallic boats, trees, tanks (less than 10 tons)	D(3)
AFV, thick brick walls, stone fences, tanks (between 10 and 25 tons)	D(4)
Concrete, rocks, ground, seabed, water surface, tanks (more than 25 tons)	D(5)
Fortification (may have multipliers, see 20.6.4 on page <?>)	D(6)

Example: A Hs-123 moving at 120" per impulse, collides against a brick house. The Collision Speed will be 120; so the number of dice will be twelve. (120/10) The Severity Damage for the Henschel is D(4) because it crashes against a brick house, and the Severity Damage for the house will be D(1) because the object that crashes against it was a plane; so 10(D4) for the Henschel and 10D(1) for the brick house.

The Damage Points produced by collisions first apply to all the crew members and passengers of the vehicles. Therefore in the previous example, the first Damage Points will be used up on the crew and passengers (with a modifier of -3) and the remainder, if any, to the other plane systems.

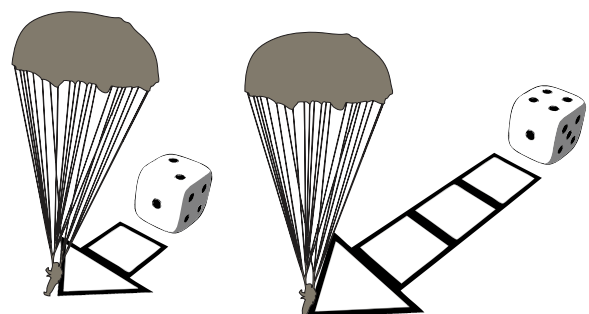
34.15. Parachutes and gliders

Parachutes and gliders need predefined landing zones. These can be assigned before the game starts, or can be assigned using flares, lights or smoke during the game - should the game be long enough to admit these kind of reinforcements.

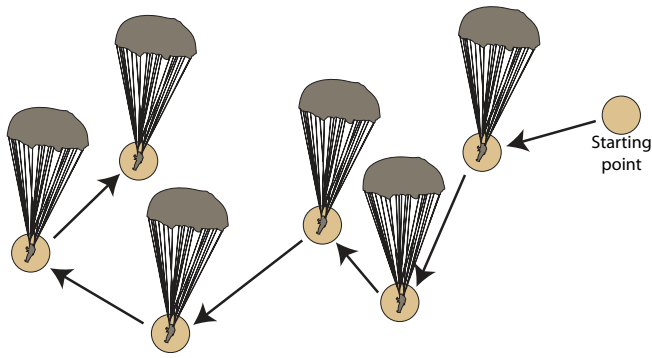
34.15.1. Paratroopers

The plane must enter from a friendly side of the game table, and must fly above the landing zone. Check the flight path to compensate for any cross-wind. Then, the player decides where to start the drop placing a "Landing Marker", and the landing procedure starts (it resembles the method used to find where a hand grenade lands).

The player rolls a die to determine where the first paratrooper lands. The distance to the landing mark is given by the value of the die multiplied by itself, and the angle, by the number on the visible face with the lowest value. Weapon containers use the same procedure.



Repeat the process for the next paratroopers, using as “Landing Marker” the place where the previous one landed.



If a paratrooper lands on unsuitable terrain, it is considered killed.

If a paratrooper lands on a building, fence, or tree, roll a die in the Combat Table.

If the element lands “out of the table”, it can enter the table later, simply “moving” until it arrives at the corresponding side of the table or it is detected by the enemy.

Paratroopers need to spend two actions to get rid of the parachute. In some cases, they will need to take their weapons from the container.

34.15.2. Gliders

The gliders must enter from a friendly side of the game table and must head to the landing zone, marked by the player and the landing procedure starts (it resembles the method used to find where a hand grenade lands). The player rolls a die to determine where the glider lands. The distance to the landing mark is given by the value of the die multiplied by itself, and the angle, by the number on the visible face with the lowest value.

That is the point where the glider touches the ground, and now it will move forward as many inches as indicated in the Landing Run shown in the Data Card. The direction will be parallel to the flight path defined by the player.

Remember to check the Landing Die Roll.

If the glider crashes against any feature of the terrain, (building, ravine, fence, tree) treat it like a Crash.

If a glider lands on unsuitable terrain, it is considered destroyed.

If the glider lands “out of the table”, their passengers can enter the table later, simply “moving” until they arrive at the corresponding side of the table or is detected by the enemy. It must pass the Landing Die Roll check.

Glider passengers and paratroopers need to spend two actions to disembark. In some cases, they will need to take their weapons from containers.

34.16. Fire on board

Usually, a fire starts due to damage, and most of the times, its “strength” is determined by a die - the higher the number, the stronger the fire, being two the minimum strength (one means that the fire was put out). We advise you represent this value with a tiny die.

At the start of every turn, the strength of every fire can change. To do so, roll a die for every fire. If the result is higher or equal than the current value, the fire strength is reduced by one. If the result is lower than the current value, the fire strength is increased by one.

If the fire strength reduces to one, it disappears. If the fire strength reaches the value of six, this means that the fire is out of control and the vehicle has been completely destroyed.

Every fire emits a cloud of smoke each turn of the same value as the original fire.

An already burnt object can't catch fire again.

34.16.1. Putting out fires (Optional)

If the aircraft is flying, the pilot can use the automatic extinguishers. The player rolls a die and if the die roll is bigger than the fire, the fire is gone.

This can be done only once per engine.

If the aircraft is landed, the fire can be put out with water, sand, spades, fire extinguishers, etc. at the cost of one action per figure and attempt. To reduce one point of fire, the player must roll a die (applying the corresponding modifier) and get a result higher than the fire value.

Figures may use extinguishers inside landed airplanes without any penalization.

FIRE FIGHTING	
Equipment	Mod
Bare hands	-2
Spade, Broom	+1
Sand/Water	+2
Fire extinguishers	+3
Hose	+4

34.17. Air Support

Most of the time, air support simply means that the player will be able to call for at least one strafing run or get some help from tactical bombers. Of course, enemy elements have plenty of time to react against an incoming plane.

34.17.1. Strafing Runs

The plane must enter the game table vertically above the marker placed by the Player.

The target must be visible from the air, or its position must be clearly marked for the pilot (fires, colored smoke, flares or tracers). If this is not the case, a die roll against the Quality of the pilot may mean that the plane attacks the closest friendly unit.

If there is no designated target, the pilot may choose to pick one; check for the elements (friendly and enemy, unless one of the sides is clearly identified from above by flags) present in the flight path and roll a die to know which will be attacked.

The strafing run starts one turn before the plane arrives at the game table. The fire will come from the point marked by the player. Like any other kind of vehicles, airplanes have four impulses so they can fire up to four times in a turn.

In the same way, planes - but not gliders - are always considered Located, so the enemy can shoot against it even if the plane is not on the table.

The width of the strafing run zone is twice the Quality of the pilot, in inches and must precede the plane's flight path.

In the case of tail gunners or turrets, the target is a circular area with the Quality of the gunner as the radius.

34.17.2. Tactical Bombing

The player that controls the plane declares the number and type of bombs that will be dropped in each bombing run.

The target must be visible from the air, or its position must be clearly marked for the pilot (fires, colored smoke, cloth arrows). As before,

if the target is not marked, a die roll against the Quality of the pilot may mean that the plane attacks the closest friendly unit.

The procedure is quite similar to the grenade throwing; the player rolls a die to determine where the bomb hits. The angle is given by the number on the visible face with the lowest value. The distance depends on the type of aircraft used to drop the bomb.

In the case of fighters, the distance is given by the value of the die multiplied by itself.

In the case of fighter-bombers, the distance is given by the value of the die multiplied by a second die.

For dive bombers, the distance is given by the value of the die.

Be aware that if you play with 28mm figures, even a 50kg bomb dropped by a fighter bomber could cause a destruction much bigger than expected.

34.17.3. Observation

Planes can be used to find enemies, as most of them have positive modifiers for spotting. But if there is no a Forward Air Observer included in the ground forces, probably the only way to disclose the enemy elements spotted by the plane is to start a strafing run against them.



ADDENDUM

HERE IS WHERE YOU WILL FIND THE DATA
CARDS, SCENARIOS AND THE MARKERS
YOU WILL NEED TO PLAY THE GAME.

WITTMANN'S FIRST TEST JULY, 12, 1941

Operation Barbarossa, was the code name for Nazi Germany's World War II invasion of the Soviet Union, which began on 22 June 1941, and Wittmann, and soon after he took part in it. His STUG IIIA was ordered to deploy in an advantageous position at the top of a hill, named Point 65.5. Once there, *Rottenführer* Klinck, Wittmann's layer, spotted a number of enemy tanks moving swiftly towards them...

After relocating to a new, more favorable position, Wittmann readied his crew. Kildenhoff, the driver, relocated the vehicle promptly helping the gunner to kill the enemy tanks one after another.

The encounter meant the destruction of six T-34/76 and Wittmann was awarded with the Iron Cross Second Class.

Scenario Information

Table: 180cm x 240cm (6' x 8')

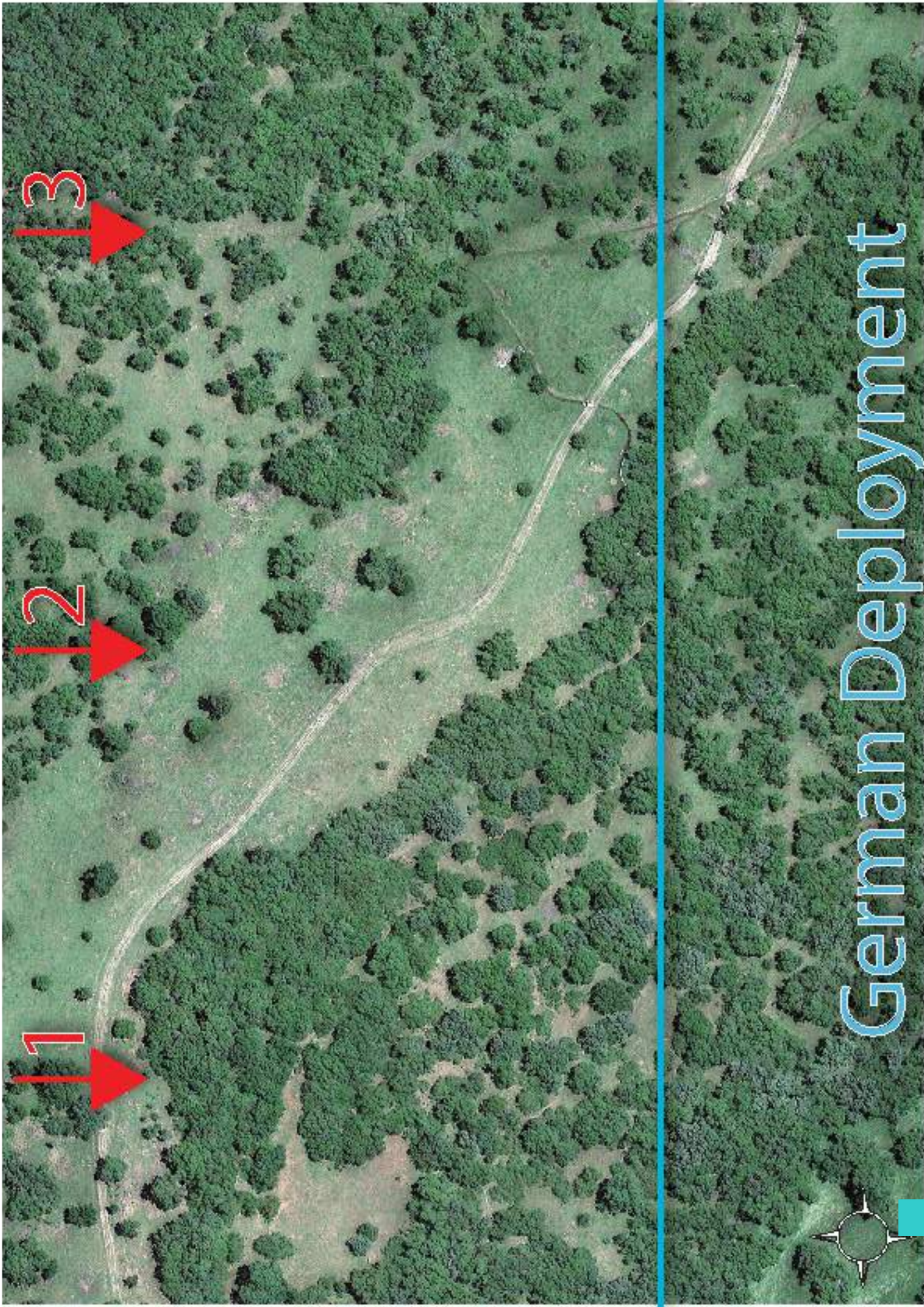
Duration of Game: 10 turns

Prevailing Wind: 1,2,3 (W), 4 (SW), 5 (E), 6 (S)

Wind Speed: 1D6 inches per turn

Special Conditions:

Visibility: 0 Perfect.



German Deployment



GERMAN BRIEFING

“Comrades, the victory is near! Soon the Red Scum will appear and we must be ready to destroy them. Kildenhof, hide the STUG in those bushes! Klinck, register the poplar grove at the right and the old pine to the left! They will appear in a few seconds, so stay alert!!”.

FORCES

1 STUG IIIA Crew Quality 4, deployed HIDDEN anywhere behind the blue line.

The German commander registered some points of the map, so there is a FREE “Range Estimation” he can use to reduce the penalty for the first shot by one.

The German commander is 10” away from the StuG, but in sight of the gunner. He can acquire targets for the gunner from there, returning to the StuG only if the destroyer needs to move.

The German player may deploy up to five decoy Mojons for free.

Awareness Condition: Black

VICTORY POINTS

Automatic Victory if six enemy tanks are destroyed

+ 10 points for every enemy tank destroyed

+5 for each enemy tank immobilized or KO

CHANGES IN THE VICTORY POINTS

-5 VP per Tellermine 43 (up to three)

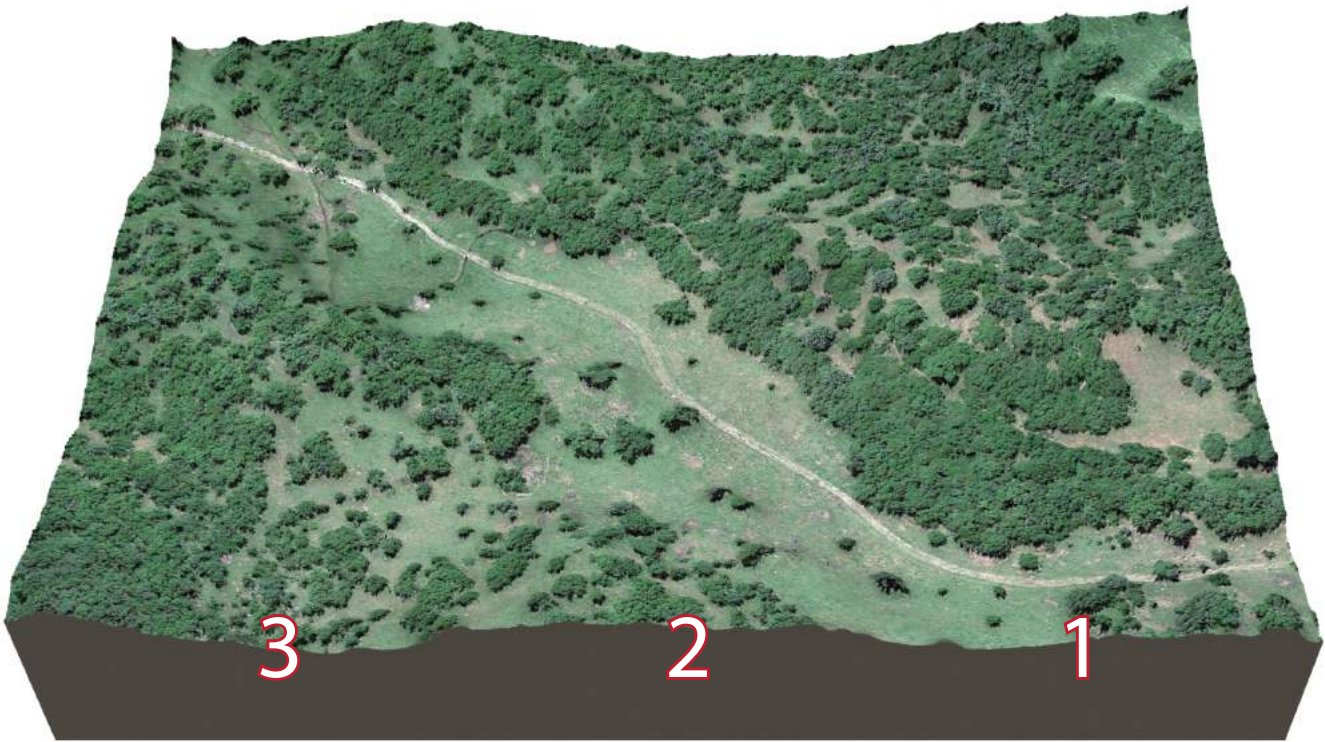
-5 VP for every extra decoy Mojon deployed

PROMOTION POINTS

Promotion Points Needed to play this scenario: zero

+10 points for each turn the STUG commander is not buttoned-up.

+10 points for every enemy acquired by the commander from the ground.



RED ARMY BRIEFING

12th, July, 1941. Near Uman, in what was once a quiet rural area, some elements of 19th Mechanized Corps are preparing to withdraw to another line of defense – Cherkasy – but under steady pressure from German forces, Polkóvnik Avdeyev sent some T-34 to slow the Nazis, sacrificing themselves to gain their comrades time to establish a new line of defense.

You are Stárshiy Leytenánt Nikolai Mikhailov, and you and a few others must find and the German forces in order to hold them back long enough for your comrades to reach Cherkasy. To Uman! Move on!

FORCES

8 T-34/76 Crew Quality 2, deployed at turn one randomly at any of the three enter points of the North side. They enter the map buttoned-up. Awareness Condition: Yellow

Mandatory initial orders: Enter the map and try to follow the road bounding to Uman.

VICTORY POINTS

Automatic Victory if the STUG IIIA is destroyed

+5 for T-34/76 that exits the map (South edge)

The Soviet force starts the game with Initiative on Turn 1.

CHANGES IN THE VICTORY POINTS

If the soviet player decides to start the attack under the cover of the darkness, -10 VP for every “+1” of visibility (up to 3).

“Recon”; if the soviet player decides to pay for this option, he will subtract 10 VP and will roll a D6, having the right to know which enemy elements are hidden in that number of enemy markers, chosen by the soviet player.

PROMOTION POINTS

Promotion Points Needed to play this scenario: zero

+30 points if all the tank commanders stay all the game buttoned-up

+20 points if all the soviet tanks remain in visual contact

VARIABLE REINFORCEMENTS

The Soviet force automatically receives reinforcements (one T-34/76, on a die roll of one) at the beginning of each turn.

Reinforcements enter the table using the same random points used by the initial forces.

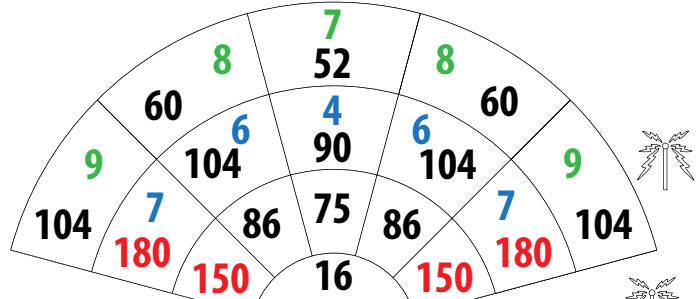
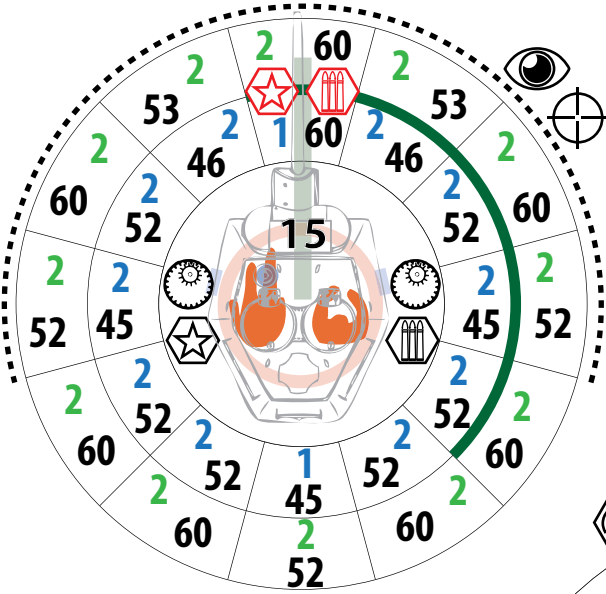
T-34/76D 1942

Can't pivot. Speed: 20" or 28" (road) per impulse), 77 rounds

v0
Tons
28

G Pressure
0.6

5		3		2	
7		5		7	



3	
6	
2	

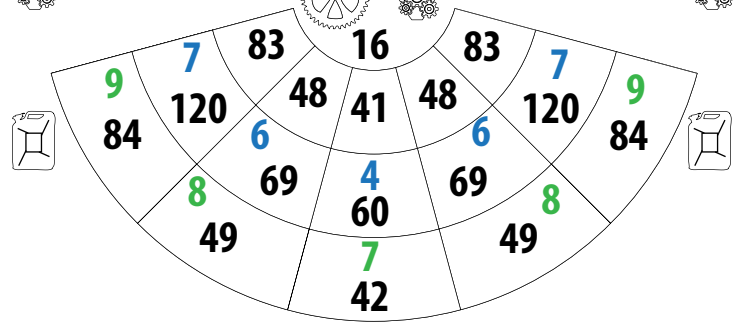
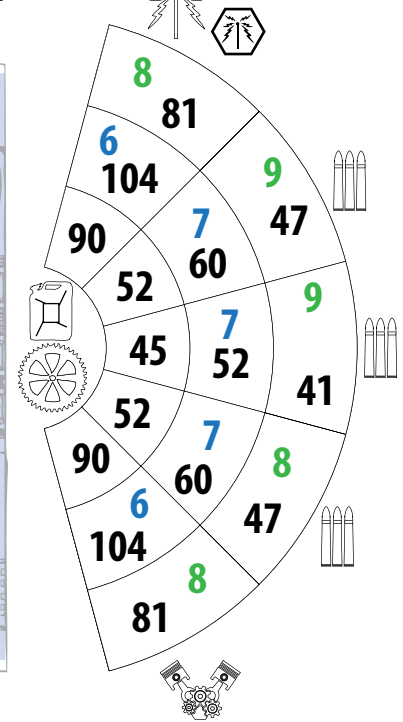
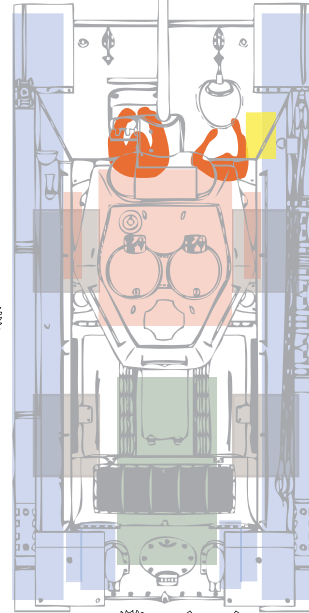
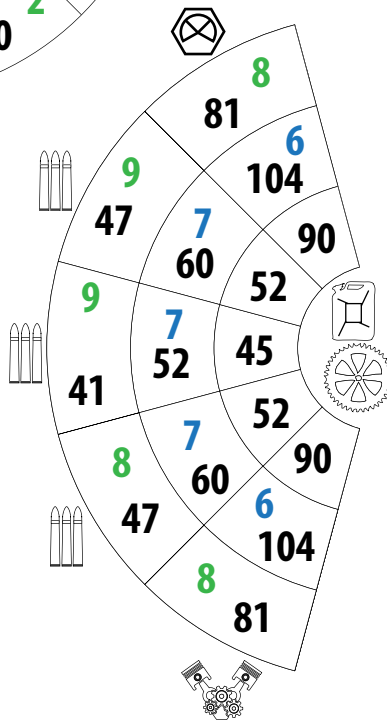
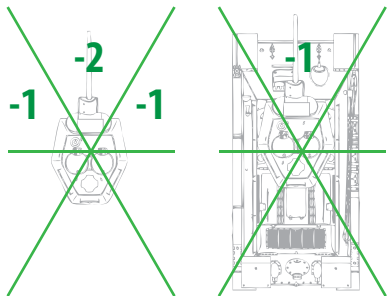
Open Hatch

Cmdr
DT
D(P2R5)

Loader

Radio
DT
D(P2R5)

Driver



-1
Fire

76mm F-34 (SHOTS PER TURN: LOADER QUALITY) (GUN SIGHT: 2)

Shell	Type	Against Armor					Against Other Targets					
		70" (100m)	500m	1000m	1500m	2000m	Hit	Crater	R4	R3	R2	R1
BR-350A	APHEBC	78mm/4D	71mm/4D	63mm/4D	56mm/4D	50mm/4D	3D(3)					
BR-350B	APHEBC	95mm/4D	87mm/4D	77mm/4D	68mm/4D	60mm/4D	4D(3)					
BR-350P	APCBC	104mm/4D	85mm/4D	69mm/4D	57mm/4D	46mm/4D	1D(3)					
BP-350A	APCR	130mm/4D	92mm/4D	60mm/4D	39mm/4D	26mm/4D	1D(3)					
OF-350M	HE	16mm/8D					8D(5)	D-3(1")	D-1(2")	D(3")	D+1(6")	D+2(18")
BP-350A	HEAT	80mm/8D					8D(5)					



INTRODUCTORY SCENARIO “EASY COMPANY” JUNE, 6, 1944

Paratroopers of the 101st Airborne Division “Screaming Eagles” jumped first on June 6. Navigating errors and a lack of Eureka signal caused to come down on the wrong drop zone or widely scattered. They must try to regroup, but the Germans sent their forces to hunt them down.

The goal of this scenario is to learn how to play.

Start with only one squad per side and then increase the complexity of the combat with more squads or using optional rules.

As you will see, the map is much bigger than the table so you can play this scenario as many times as you want. One side chooses where to play, the other one, the visibility.

Scenario Information

Scenario Type: Encounter

Duration of Game: 10 turns

Size: 4' x 4'

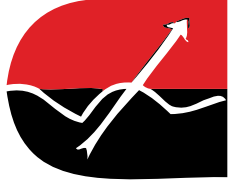
Visibility: Variable, from Perfect (0) to Before Dawn (2)

4'x 4' GAME TABLE

NORTH



Panzergr nadier, 91. Luftlande Infanterie Division



Platoon HQ, Quality 3

Leutnant MP40 3B+1(P1)	Felwebel MP40 3B+1(P1)	Private Mauser S-2(P2)	Private Mauser S-2(P2)	Private Mauser S-2(P2)
------------------------------	------------------------------	------------------------------	------------------------------	------------------------------

First Squad, 1st Team, Quality 3

Felwebel MP40 3B+1(P1)	Private Mauser S-2(P2)	Private Mauser S-2(P2)	Private Mauser S-2(P2)	Gunner Luger MG42 XB-2(P3)(R7,9,12)
------------------------------	------------------------------	------------------------------	------------------------------	--

Second Squad, 1st Team, Quality 3

Felwebel MP40 3B+1(P1)	Private Mauser S-2(P2)	Private Mauser S-2(P2)	Private Mauser S-2(P2)	Gunner Luger MG42 XB-2(P3)(R7,9,12)
------------------------------	------------------------------	------------------------------	------------------------------	--

Third Squad, 1st Team, Quality 3

Felwebel MP40 3B+1(P1)	Private Mauser S-2(P2)	Private Mauser S-2(P2)	Private Mauser S-2(P2)	Gunner Luger MG42 XB-2(P3)(R7,9,12)
------------------------------	------------------------------	------------------------------	------------------------------	--

2nd Team, Quality 3

Gunner Luger MG42 XB-2(P3)(R7,9,12)	Private Mauser S-2(P2)	Obergrfter MP40 3B+1(P1)
--	------------------------------	--------------------------------

2nd Team, Quality 3

Gunner Luger MG42 XB-2(P3)(R7,9,12)	Private Mauser S-2(P2)	Obergrfter MP40 3B+1(P1)
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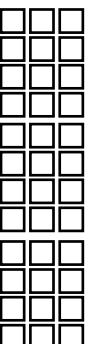
2nd Team, Quality 3

Gunner Luger MG42 XB-2(P3)(R7,9,12)	Private Mauser S-2(P2)	Obergrfter MP40 3B+1(P1)
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Sniper Team, Quality 3

Private Mauser S-2(P2)	Sniper Mauser S-2(P2) 3xSight
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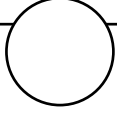
Hand Grenades



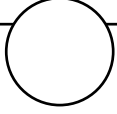
Stielhandgranate M-43, Range:19" Damage: 1D+1(2")

Paratroopers, 506th PIR, 101 Airborne Division

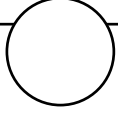
Platoon HQ, Quality 4

	1st LT. Carbine D(P3)	2nd LT. Carbine D(P3)	SSgt Carbine D(P3)	Private Garand S-2(P3)
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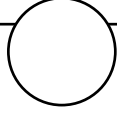
First Squad, Quality 4

	Sgt Garand S-2(P3)	Private Garand S-2(P3)	Private Garand S-2(P3)	Private Garand S-2(P3)
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Second Squad, Quality 4

	Sgt Garand S-2(P3)	Private Garand S-2(P3)	Private Garand S-2(P3)	Private Garand S-2(P3)
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Third Squad, Quality 4

	Sgt Garand S-2(P3)	Private Garand S-2(P3)	Private Garand S-2(P3)	Private Garand S-2(P3)
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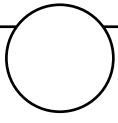
Extra Cal.30 M1919A6

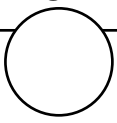
Hand Grenades

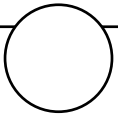
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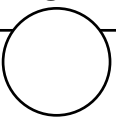
Mk-2 Pineapple, Range:10" Damage: 1D(2")

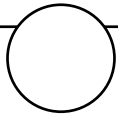
Cal.30 XB-2(P3))	Cal.30 XB-2(P3))	Cal.30 XB-2(P3))
---------------------	---------------------	---------------------

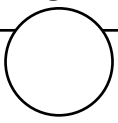
	Sgt Garand S-2(P3)	Private Garand S-2(P3)	Private Garand S-2(P3)	Private Garand S-2(P3)	Private Garand S-2(P3)
---	--------------------------	------------------------------	------------------------------	------------------------------	------------------------------

	Sgt Garand S-2(P3)	Gunner Cal.30 XB-2(P3)	Assistant Garand S-2(P3)	Ammo Carbine D(P3)
---	--------------------------	------------------------------	--------------------------------	--------------------------

	Sgt Garand S-2(P3)	Private Garand S-2(P3)	Private Garand S-2(P3)	Private Garand S-2(P3)	Private Garand S-2(P3)
---	--------------------------	------------------------------	------------------------------	------------------------------	------------------------------

	Sgt Garand S-2(P3)	Gunner Cal.30 XB-2(P3)	Assistant Garand S-2(P3)	Ammo Carbine D(P3)
---	--------------------------	------------------------------	--------------------------------	--------------------------

	Sgt Garand S-2(P3)	Private Garand S-2(P3)	Private Garand S-2(P3)	Private Garand S-2(P3)	Private Garand S-2(P3)
---	--------------------------	------------------------------	------------------------------	------------------------------	------------------------------

	Sgt Garand S-2(P3)	Gunner Cal.30 XB-2(P3)	Assistant Garand S-2(P3)	Ammo Carbine D(P3)
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GERMAN BRIEFING

After several hours of chaos, now the orders start to flow. The 13. Kompanie, III. Battallion, 1058 Grenadier-Regimen, 91. Luftlande Infanterie Division is the closest unit to Saint Come du Mont.

Your mission is to destroy or capture every enemy unit in the area. Bear in mind that you will fight against highly trained and motivated men.

With a die roll of 1-2, you enter by the East Side

With a die roll of 3-4, you enter by the South Side

With a die roll of 5-6, you enter by the West Side

Aggressiveness: two

VICTORY POINTS

+25 if the entire US force is captured or killed.

+5 for each enemy wounded or captured.

+1 for each enemy KIA.

Special Rules

Autoleader: This means that in a leader dies or become wounded, another man will take his place. This new leader does not increase his Quality.

Scouts: German squads may detach scouts, but they may have only one active in any given time.

PROMOTION POINTS

Promotion Points Needed to play this scenario: zero

+ 5 for each time the german squad makes a coordinated attack using both fireteams (see "10.1.7. Tactical Orders assigned to leaders" on page 44).

+5 points for every

+10 points if the first weapon that fires in the Squad is the MG.

+10 points for each flank attack.

+10 points for each close combat assault (employing hand grenades).

-5 for every casualty

The "Promotion Points" can be updated in your Rattenkrieg! Account and must be countersigned by your opponent.

US BRIEFING

Looks like we landed at the wrong place. Now it's time to move North to regroup with the other units of the 506th before the Germans have time to react.

You enter the game table from the South, and must find a way to exit by the North side.

Aggressiveness: two

VICTORY POINTS

+25 if the entire US force exits the North side of the table.

+ 25 if the entire German force is destroyed.

+5 for each enemy captured.

+1 for each enemy KIA.

PROMOTION POINTS

Promotion Points Needed to play this scenario:
zero

+5 points for every enemy unit spotted by scouts while they are with the Squad Leader.

+10 points if the Leader directs the fire of the support teams.

+10 points if the Leader joins the assault team.

+25 extra points if the last three conditions are met.

-7 for every casualty

The "Promotion Points" can be updated in your Rattenkrieg! Account and must be countersigned by your opponent.

British Infantry Platoon Support Teams (1944)



Bren MG, Quality 3

○	Gunner Bren XB-1(P3)(R7)	Assistant Lee-Enfield S-1(P2)
	○	

Vickers HMG, Quality 3

○	Corporal Lee-Enfield S-1(P2)	Gunner Bren XB-1(P2)(R5)	Loader Lee-Enfield S-1(P2)
	○		

Sniper, Quality 3

○	Sniper Lee-Enfield S-1(P2) Scope x3	Spotter Lee-Enfield S-1(P2) Scope x3
	○	

Engineer Section, Quality 3

○	Sergeant Lee-Enfield S-1(P2)	Engineer Lee-Enfield S-1(P2)	Engineer Lee-Enfield S-1(P2)
	Engineer Flamethrower 18"(R6"U10)	Engineer Lee-Enfield S-1(P2)	Engineer Lee-Enfield S-1(P2)

Reece, Quality 3

○	Sergeant Lee-Enfield S-1(P2)	Private Lee-Enfield S-1(P2)	Private Lee-Enfield S-1(P2)	Private Lee-Enfield S-1(P2)
	○			

BREN CARRIER (22912)				
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Medium Mortar, Quality 3

○	Corporal Lee-Enfield S-1(P2)	Private Lee-Enfield S-1(P2)	Private Lee-Enfield S-1(P2)
	3in Mortar		

Light Mortar, Quality 3

○	Private Lee-Enfield S-1(P2)	Private Lee-Enfield S-1(P2)
	2in Mortar	

PIAT, Quality 3

○	Gunner PIAT XB-1(P3)(R7)	Loader Lee-Enfield S-1(P2)
	○	

3" Medium Mortar					
Armor	HE	Crater/R5	R4	R3	R1
40mm/5D	4D(5)	D-3(1")	1D-1(2")	1D(4")	1D+1(5") 1D+2(10")

2" Light Mortar						
Armor	HE	Crater/R5	R4	R3	R2	R1
20mm/1D	3D(4)	1D-1(1")	1D(2")	1D+1(3")	1D+2(4")	

PIAT			
Type	Range	Armor	HE
HEAT	50"	2D6x10mm/6D	4D(5)

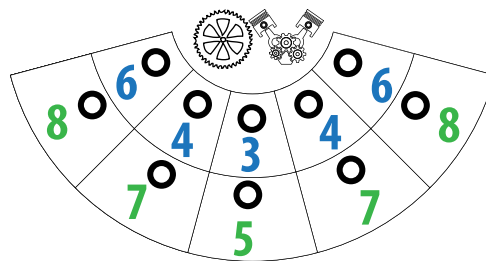
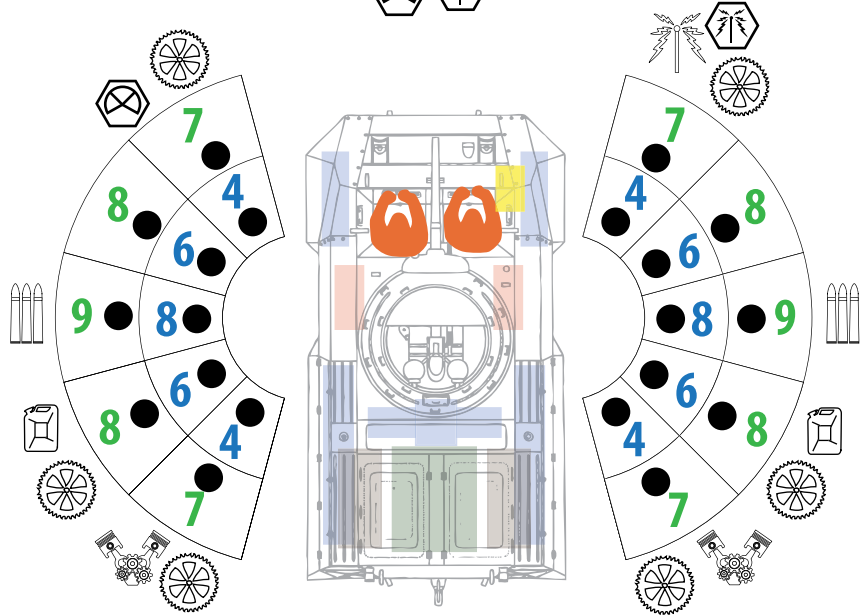
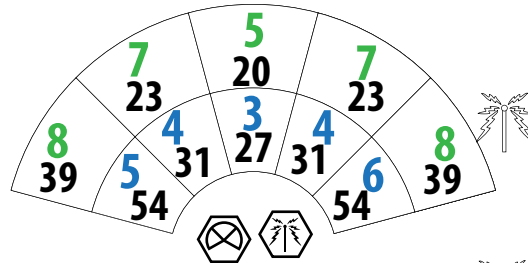
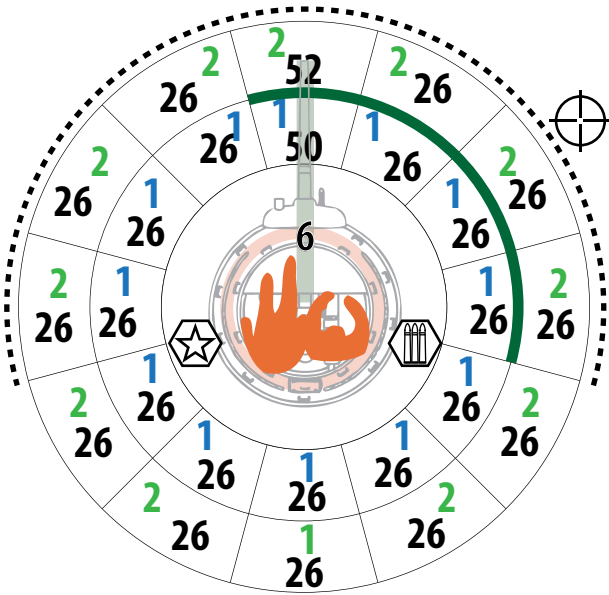
M8 Greyhound

Can't tow. Speed: Driver Quality x 3 (off road) 50" (road) per impulse. 106 rounds.

V0
Tons
8

G Pressure
0.6

DAMAGE CONSEQUENCES	
Equipment	Effect
Engine	Every hit halves the speed
Fuel Tank	Leaks, increase Fire chance per hit
Wheels	The vehicle stops



3	
3	
2	

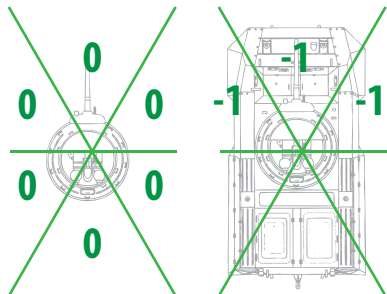
Open Hatch

Cmdr
Cal.30
D-2(P3R8)

Loader
M2HB
D-3(P4R5)

Radio

Driver



5		2		5	
1		2		1	

+1
Fire

37mm M5 (SHOTS PER TURN: LOADER QUALITY + 5) (GUN SIGHT: 1)

Shell	Type	Against Armor					Against Other Targets					
		100m	500m	1000m	1500m	2000m	HE	Crater	R4	R3	R2	R1
M74 Shot	AP	76mm/2D	59mm/2D	43mm/2D	31mm/2D	22mm/2D	1D(2)					
M51 Shot	APC	66mm/2D	58mm/2D	50mm/2D	43mm/2D	37mm/2D	1D(2)					
M2	Canister						2D(2)					D-1(2")

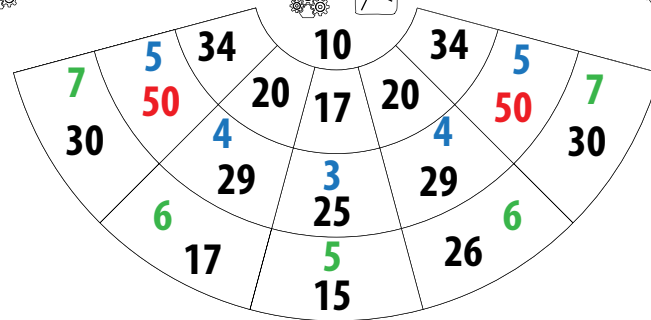
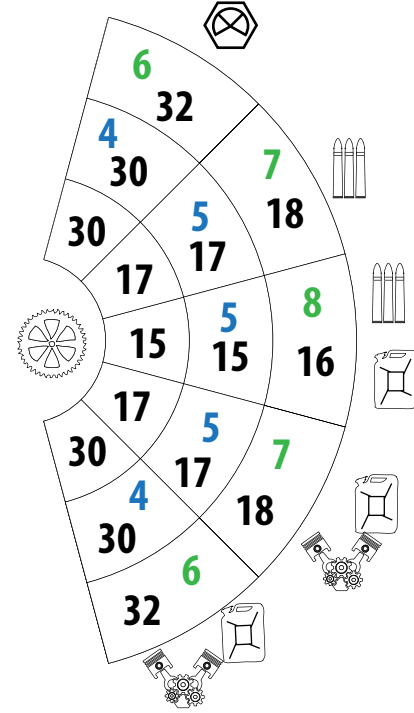
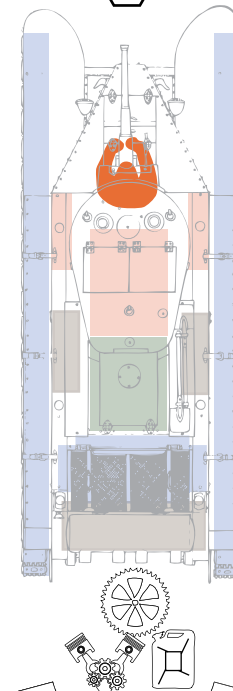
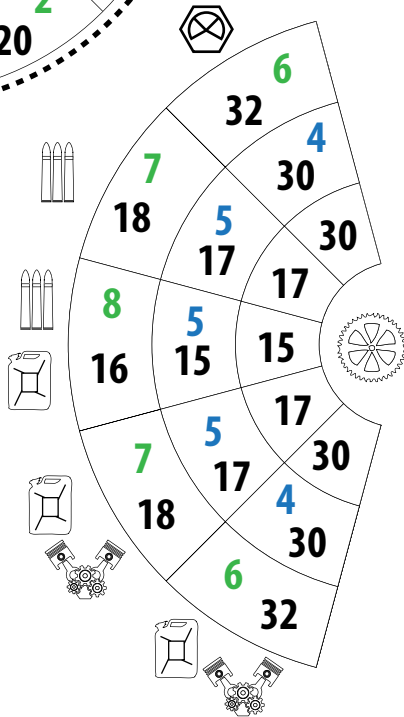
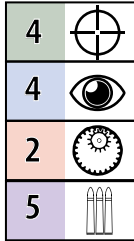
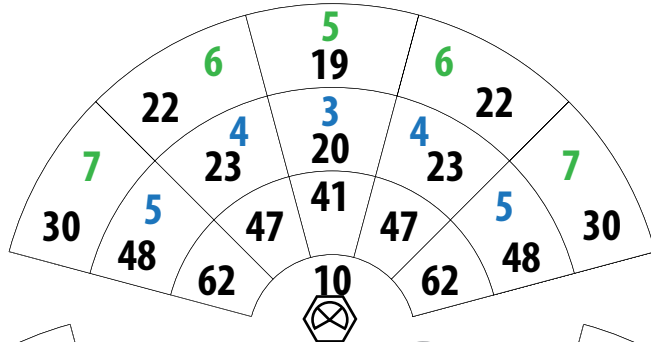
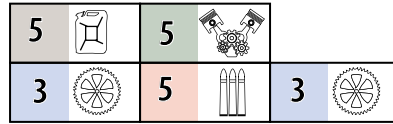
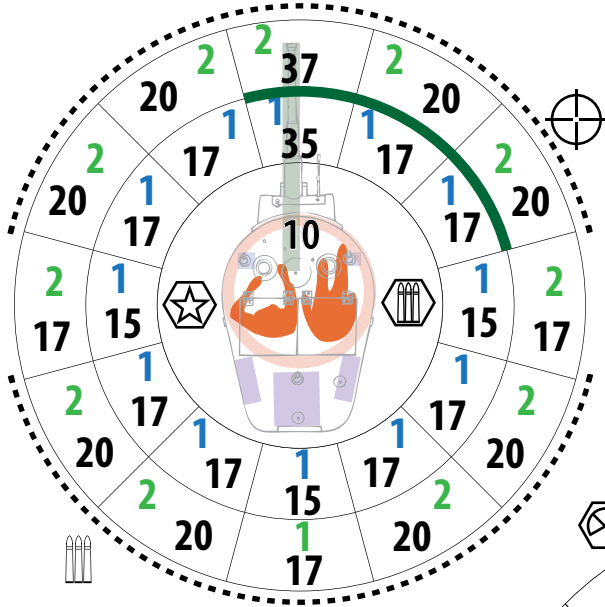
- Protection against light weapons and fragmentation
- Protection against HMG, light weapons and fragmentation

BT-5

Can pivot. Speed: 19" or 25" (road) per impulse, 100 rounds

VO
Tons
11

G Pressure
0.6

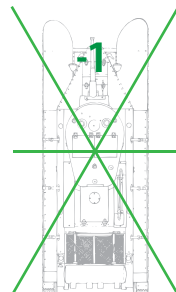
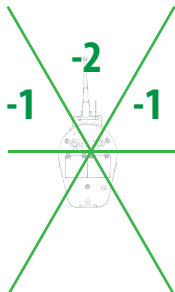


Open Hatch

Cmdr
DT
D(P2R5)

Loader

Driver



+1
Fire

45mm ZIS-5 (SHOTS PER TURN: LOADER QUALITY + 3) (GUN SIGHT: 1)

Shell	Type	Against Armor					Against Other Targets					
		100m	500m	1000m	1500m	2000m	HE	Crater	R4	R3	R2	R1
BR-240	APHEBC	59mm/2D	45mm/2D	35mm/2D	29mm/2D	26mm/2D	1D(2)					
BR-240SP	AP	68mm/2D	51mm/2D	35mm/2D	25mm/2D	17mm/2D	1D(2)					

MULTISCALE EQUIVALENCES						
1/35	1/48	1/56	1/72	1/100	1/285	1/600
cm	cm	inches	cm	mm	mm	mm
4	3	1	2	14	5	2
8	6	2	4	28	10	5
12	9	3	6	43	15	7
16	12	4	8	57	20	9
20	15	5	10	71	25	12
24	18	6	12	85	30	14
28	21	7	14	100	35	17
33	24	8	16	114	40	19
37	27	9	18	128	45	21
41	30	10	20	142	50	24
45	33	11	22	156	55	26
49	36	12	24	171	60	28
53	39	13	26	185	65	31
57	41	14	28	199	70	33
61	44	15	30	213	75	36
65	47	16	32	228	80	38
69	50	17	34	242	85	40
73	53	18	36	256	90	43
77	56	19	38	270	95	45
81	59	20	40	284	100	47
85	62	21	41	299	105	50
89	65	22	43	313	110	52
93	68	23	45	327	115	55
98	71	24	47	341	120	57
102	74	25	49	356	125	59
106	77	26	51	370	130	62
110	80	27	53	384	135	64
114	83	28	55	398	140	66
118	86	29	57	412	145	69
122	89	30	59	427	150	71
126	92	31	61	441	155	73
130	95	32	63	455	160	76
134	98	33	65	469	165	78
138	101	34	67	484	170	81
142	104	35	69	498	175	83
146	107	36	71	512	180	85
150	110	37	73	526	185	88
154	113	38	75	541	190	90
158	116	39	77	555	195	92
163	119	40	79	569	200	95
167	121	41	81	583	205	97
171	124	42	83	597	210	100

MULTISCALE EQUIVALENCES						
1/35	1/48	1/56	1/72	1/100	1/285	1/600
cm	cm	inches	cm	mm	mm	mm
175	127	43w	85	612	215	102
179	130	44	87	626	220	104
183	133	45	89	640	225	107
187	136	46	91	654	230	109
191	139	47	93	669	235	111
195	142	48	95	683	240	114
199	145	49	97	697	245	116
203	148	50	99	711	250	119
207	151	51	101	725	255	121
211	154	52	103	740	260	123
215	157	53	105	754	265	126
219	160	54	107	768	270	128
224	163	55	109	782	274	130
228	166	56	111	797	279	133
232	169	57	113	811	284	135
236	172	58	115	825	289	137
240	175	59	117	839	294	140
244	178	60	119	853	299	142
248	181	61	121	868	304	145
252	184	62	122	882	309	147
256	187	63	124	896	314	149
260	190	64	126	910	319	152
264	193	65	128	925	324	154
268	196	66	130	939	329	156
272	199	67	132	953	334	159
276	202	68	134	967	339	161
280	204	69	136	981	344	164
284	207	70	138	996	349	166
289	210	71	140	1010	354	168
293	213	72	142	1024	359	171
297	216	73	144	1038	364	173
301	219	74	146	1053	369	175
305	222	75	148	1067	374	178
309	225	76	150	1081	379	180
313	228	77	152	1095	384	183
317	231	78	154	1109	389	185
321	234	79	156	1124	394	187
325	237	80	158	1138	399	190
329	240	81	160	1152	404	192
333	243	82	162	1166	409	194
337	246	83	164	1181	414	197
341	249	84	166	1195	419	199

MULTISCALE EQUIVALENCES						
1/35	1/48	1/56	1/72	1/100	1/285	1/600
cm	cm	inches	cm	mm	mm	mm
345	252	85	168	1209	424	202
350	255	86	170	1223	429	204
354	258	87	172	1237	434	206
358	261	88	174	1252	439	209
362	264	89	176	1266	444	211
366	267	90	178	1280	449	213
370	270	91	180	1294	454	216
374	273	92	182	1309	459	218
378	276	93	184	1323	464	220
382	279	94	186	1337	469	223
386	282	95	188	1351	474	225
390	284	96	190	1366	479	228
394	287	97	192	1380	484	230
398	290	98	194	1394	489	232
402	293	99	196	1408	494	235
406	296	100	198	1422	499	237
410	299	101	200	1437	504	239
415	302	102	202	1451	509	242
419	305	103	203	1465	514	244
423	308	104	205	1479	519	247
427	311	105	207	1494	524	249
431	314	106	209	1508	529	251
435	317	107	211	1522	534	254
439	320	108	213	1536	539	256
443	323	109	215	1550	544	258
447	326	110	217	1565	549	261
451	329	111	219	1579	554	263
455	332	112	221	1593	559	266
459	335	113	223	1607	564	268
463	338	114	225	1622	569	270
467	341	115	227	1636	574	273
471	344	116	229	1650	579	275
475	347	117	231	1664	584	277
480	350	118	233	1678	589	280
484	353	119	235	1693	594	282
488	356	120	237	1707	599	284
492	359	121	239	1721	604	287
496	362	122	241	1735	609	289
500	364	123	243	1750	614	292
504	367	124	245	1764	619	294
508	370	125	247	1778	624	296
512	373	126	249	1792	629	299

MULTISCALE EQUIVALENCES						
1/35	1/48	1/56	1/72	1/100	1/285	1/600
cm	cm	inches	cm	mm	mm	mm
516	376	127	251	1806	634	301
520	379	128	253	1821	639	303
524	382	129	255	1835	644	306
528	385	130	257	1849	649	308
532	388	131	259	1863	654	311
536	391	132	261	1878	659	313
541	394	133	263	1892	664	315
545	397	134	265	1906	669	318
549	400	135	267	1920	674	320
553	403	136	269	1934	679	322
557	406	137	271	1949	684	325
561	409	138	273	1963	689	327
565	412	139	275	1977	694	330
569	415	140	277	1991	699	332
573	418	141	279	2006	704	334
577	421	142	281	2020	709	337
581	424	143	283	2034	714	339
585	427	144	284	2048	719	341
589	430	145	286	2062	724	344
593	433	146	288	2077	729	346
597	436	147	290	2091	734	348
601	439	148	292	2105	739	351
606	442	149	294	2119	744	353
610	445	150	296	2134	749	356
614	447	151	298	2148	754	358
618	450	152	300	2162	759	360
622	453	153	302	2176	764	363
626	456	154	304	2190	769	365
630	459	155	306	2205	774	367
634	462	156	308	2219	779	370
638	465	157	310	2233	784	372
642	468	158	312	2247	789	375
646	471	159	314	2262	794	377
650	474	160	316	2276	799	379
654	477	161	318	2290	804	382
658	480	162	320	2304	809	384
662	483	163	322	2319	814	386
666	486	164	324	2333	819	389
671	489	165	326	2347	823	391
675	492	166	328	2361	828	394
679	495	167	330	2375	833	396
683	498	168	332	2390	838	398

EQUIVALENCIAS PARA MULTIESCALA						
1/35	1/48	1/56	1/72	1/100	1/285	1/600
cm	cm	pulg	cm	mm	mm	mm
687	501	169	334	2404	843	401
691	504	170	336	2418	848	403
695	507	171	338	2432	853	405
699	510	172	340	2447	858	408
703	513	173	342	2461	863	410
707	516	174	344	2475	868	412
711	519	175	346	2489	873	415
715	522	176	348	2503	878	417
719	525	177	350	2518	883	420
723	527	178	352	2532	888	422
727	530	179	354	2546	893	424
732	533	180	356	2560	898	427
736	536	181	358	2575	903	429
740	539	182	360	2589	908	431
744	542	183	362	2603	913	434
748	545	184	364	2617	918	436
752	548	185	365	2631	923	439
756	551	186	367	2646	928	441
760	554	187	369	2660	933	443
764	557	188	371	2674	938	446
768	560	189	373	2688	943	448
772	563	190	375	2703	948	450
776	566	191	377	2717	953	453
780	569	192	379	2731	958	455
784	572	193	381	2745	963	458
788	575	194	383	2759	968	460
792	578	195	385	2774	973	462
797	581	196	387	2788	978	465
801	584	197	389	2802	983	467
805	587	198	391	2816	988	469
809	590	199	393	2831	993	472
813	593	200	395	2845	998	474
817	596	201	397	2859	1003	477
821	599	202	399	2873	1008	479
825	602	203	401	2887	1013	481
829	605	204	403	2902	1018	484
833	607	205	405	2916	1023	486
837	610	206	407	2930	1028	488
841	613	207	409	2944	1033	491
845	616	208	411	2959	1038	493
849	619	209	413	2973	1043	495
853	622	210	415	2987	1048	498

EQUIVALENCIAS PARA MULTIESCALA						
1/35	1/48	1/56	1/72	1/100	1/285	1/600
cm	cm	pulg	cm	mm	mm	mm
858	625	211	417	3001	1053	500
862	628	212	419	3015	1058	503
866	631	213	421	3030	1063	505
870	634	214	423	3044	1068	507
874	637	215	425	3058	1073	510
878	640	216	427	3072	1078	512
882	643	217	429	3087	1083	514
886	646	218	431	3101	1088	517
890	649	219	433	3115	1093	519
894	652	220	435	3129	1098	522
898	655	221	437	3144	1103	524
902	658	222	439	3158	1108	526
906	661	223	441	3172	1113	529
910	664	224	443	3186	1118	531
914	667	225	445	3200	1123	533
918	670	226	446	3215	1128	536
923	673	227	448	3229	1133	538
927	676	228	450	3243	1138	541
931	679	229	452	3257	1143	543
935	682	230	454	3272	1148	545
939	685	231	456	3286	1153	548
943	687	232	458	3300	1158	550
947	690	233	460	3314	1163	552
951	693	234	462	3328	1168	555
955	696	235	464	3343	1173	557
959	699	236	466	3357	1178	559
963	702	237	468	3371	1183	562
967	705	238	470	3385	1188	564
971	708	239	472	3400	1193	567
975	711	240	474	3414	1198	569
979	714	241	476	3428	1203	571
983	717	242	478	3442	1208	574
988	720	243	480	3456	1213	576
992	723	244	482	3471	1218	578
996	726	245	484	3485	1223	581
1000	729	246	486	3499	1228	583
1004	732	247	488	3513	1233	586
1008	735	248	490	3528	1238	588
1012	738	249	492	3542	1243	590
1016	741	250	494	3556	1248	593
1020	744	251	496	3570	1253	595
1024	747	252	498	3584	1258	597

EQUIVALENCIAS PARA MULTIESCALA						
1/35	1/48	1/56	1/72	1/100	1/285	1/600
cm	cm	pulg	cm	mm	mm	mm
1028	750	253	500	3599	1263	600
1032	753	254	502	3613	1268	602
1036	756	255	504	3627	1273	605
1040	759	256	506	3641	1278	607
1044	762	257	508	3656	1283	609
1049	765	258	510	3670	1288	612
1053	768	259	512	3684	1293	614
1057	770	260	514	3698	1298	616
1061	773	261	516	3712	1303	619
1065	776	262	518	3727	1308	621
1069	779	263	520	3741	1313	623
1073	782	264	522	3755	1318	626
1077	785	265	524	3769	1323	628
1081	788	266	525	3784	1328	631
1085	791	267	527	3798	1333	633
1089	794	268	529	3812	1338	635
1093	797	269	531	3826	1343	638
1097	800	270	533	3840	1348	640
1101	803	271	535	3855	1353	642
1105	806	272	537	3869	1358	645
1109	809	273	539	3883	1363	647
1114	812	274	541	3897	1368	650
1118	815	275	543	3912	1372	652
1122	818	276	545	3926	1377	654
1126	821	277	547	3940	1382	657
1130	824	278	549	3954	1387	659
1134	827	279	551	3968	1392	661
1138	830	280	553	3983	1397	664
1142	833	281	555	3997	1402	666
1146	836	282	557	4011	1407	669
1150	839	283	559	4025	1412	671
1154	842	284	561	4040	1417	673
1158	845	285	563	4054	1422	676
1162	848	286	565	4068	1427	678
1166	850	287	567	4082	1432	680
1170	853	288	569	4097	1437	683
1174	856	289	571	4111	1442	685
1179	859	290	573	4125	1447	687
1183	862	291	575	4139	1452	690
1187	865	292	577	4153	1457	692
1191	868	293	579	4168	1462	695
1195	871	294	581	4182	1467	697

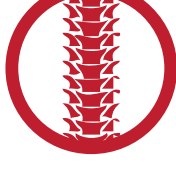
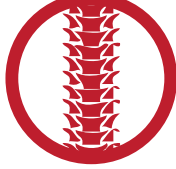
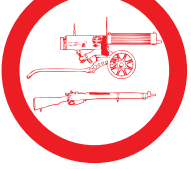
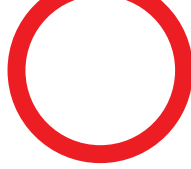
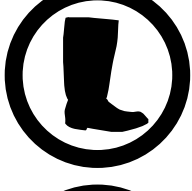
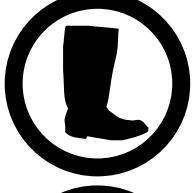
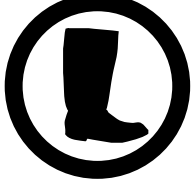
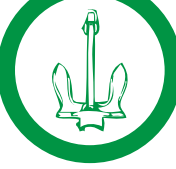
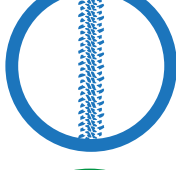
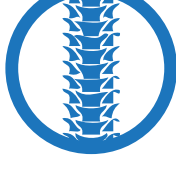
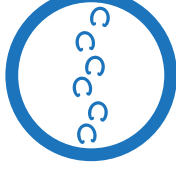
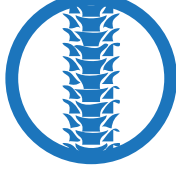
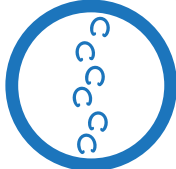
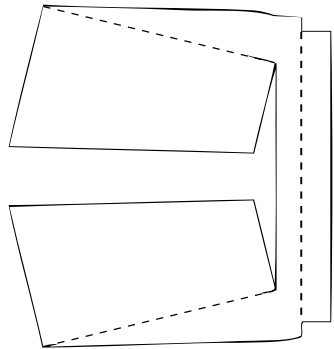
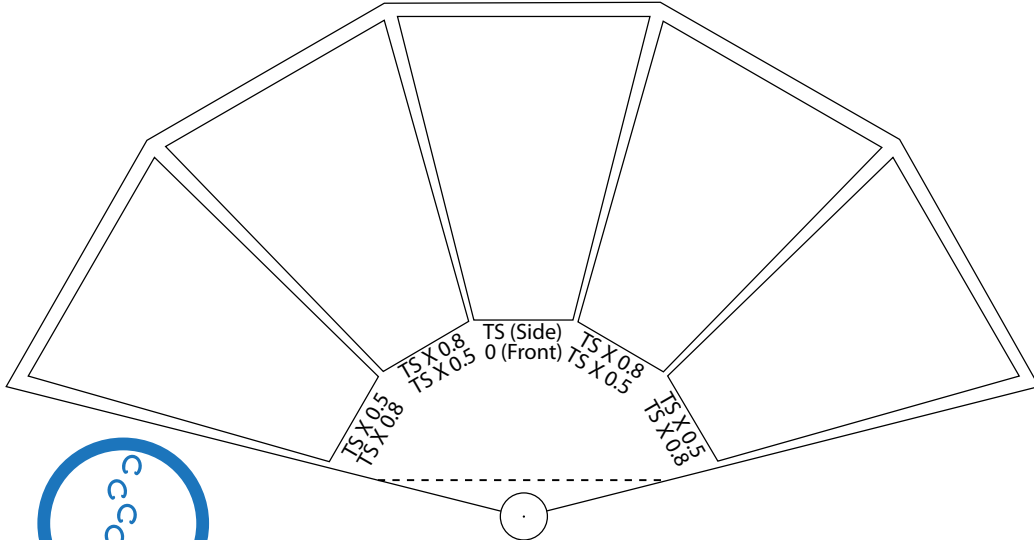
EQUIVALENCIAS PARA MULTIESCALA						
1/35	1/48	1/56	1/72	1/100	1/285	1/600
cm	cm	pulg	cm	mm	mm	mm
1199	874	295	583	4196	1472	699
1203	877	296	585	4210	1477	702
1207	880	297	587	4225	1482	704
1211	883	298	589	4239	1487	706
1215	886	299	591	4253	1492	709
1219	889	300	593	4267	1497	711
1223	892	301	595	4281	1502	714
1227	895	302	597	4296	1507	716
1231	898	303	599	4310	1512	718
1235	901	304	601	4324	1517	721
1240	904	305	603	4338	1522	723
1244	907	306	605	4353	1527	725
1248	910	307	606	4367	1532	728
1252	913	308	608	4381	1537	730
1256	916	309	610	4395	1542	733
1260	919	310	612	4409	1547	735
1264	922	311	614	4424	1552	737
1268	925	312	616	4438	1557	740
1272	928	313	618	4452	1562	742
1276	930	314	620	4466	1567	744
1280	933	315	622	4481	1572	747
1284	936	316	624	4495	1577	749
1288	939	317	626	4509	1582	752
1292	942	318	628	4523	1587	754
1296	945	319	630	4537	1592	756
1300	948	320	632	4552	1597	759
1305	951	321	634	4566	1602	761
1309	954	322	636	4580	1607	763
1313	957	323	638	4594	1612	766
1317	960	324	640	4609	1617	768
1321	963	325	642	4623	1622	770
1325	966	326	644	4637	1627	773
1329	969	327	646	4651	1632	775
1333	972	328	648	4665	1637	778
1337	975	329	650	4680	1642	780
1341	978	330	652	4694	1647	782
1345	981	331	654	4708	1652	785
1349	984	332	656	4722	1657	787
1353	987	333	658	4737	1662	789
1357	990	334	660	4751	1667	792
1361	993	335	662	4765	1672	794
1366	996	336	664	4779	1677	797

EQUIVALENCIAS PARA MULTIESCALA						
1/35	1/48	1/56	1/72	1/100	1/285	1/600
cm	cm	pulg	cm	mm	mm	mm
1370	999	337	666	4793	1682	799
1374	1002	338	668	4808	1687	801
1378	1005	339	670	4822	1692	804
1382	1008	340	672	4836	1697	806
1386	1010	341	674	4850	1702	808
1390	1013	342	676	4865	1707	811
1394	1016	343	678	4879	1712	813
1398	1019	344	680	4893	1717	816
1402	1022	345	682	4907	1722	818
1406	1025	346	684	4922	1727	820
1410	1028	347	686	4936	1732	823
1414	1031	348	687	4950	1737	825
1418	1034	349	689	4964	1742	827
1422	1037	350	691	4978	1747	830
1426	1040	351	693	4993	1752	832
1431	1043	352	695	5007	1757	834
1435	1046	353	697	5021	1762	837
1439	1049	354	699	5035	1767	839
1443	1052	355	701	5050	1772	842
1447	1055	356	703	5064	1777	844
1451	1058	357	705	5078	1782	846
1455	1061	358	707	5092	1787	849
1459	1064	359	709	5106	1792	851
1463	1067	360	711	5121	1797	853
1467	1070	361	713	5135	1802	856
1471	1073	362	715	5149	1807	858
1475	1076	363	717	5163	1812	861
1479	1079	364	719	5178	1817	863
1483	1082	365	721	5192	1822	865
1487	1085	366	723	5206	1827	868
1491	1088	367	725	5220	1832	870
1496	1091	368	727	5234	1837	872
1500	1093	369	729	5249	1842	875
1504	1096	370	731	5263	1847	877
1508	1099	371	733	5277	1852	880
1512	1102	372	735	5291	1857	882
1516	1105	373	737	5306	1862	884
1520	1108	374	739	5320	1867	887
1524	1111	375	741	5334	1872	889
1528	1114	376	743	5348	1877	891
1532	1117	377	745	5362	1882	894
1536	1120	378	747	5377	1887	896

EQUIVALENCIAS PARA MULTIESCALA						
1/35	1/48	1/56	1/72	1/100	1/285	1/600
cm	cm	pulg	cm	mm	mm	mm
1540	1123	379	749	5391	1892	898
1544	1126	380	751	5405	1897	901
1548	1129	381	753	5419	1902	903
1552	1132	382	755	5434	1907	906
1557	1135	383	757	5448	1912	908
1561	1138	384	759	5462	1916	910
1565	1141	385	761	5476	1921	913
1569	1144	386	763	5490	1926	915
1573	1147	387	765	5505	1931	917
1577	1150	388	767	5519	1936	920
1581	1153	389	768	5533	1941	922
1585	1156	390	770	5547	1946	925
1589	1159	391	772	5562	1951	927
1593	1162	392	774	5576	1956	929
1597	1165	393	776	5590	1961	932
1601	1168	394	778	5604	1966	934
1605	1171	395	780	5618	1971	936
1609	1173	396	782	5633	1976	939
1613	1176	397	784	5647	1981	941
1617	1179	398	786	5661	1986	944
1622	1182	399	788	5675	1991	946
1626	1185	400	790	5690	1996	948
1630	1188	401	792	5704	2001	951
1634	1191	402	794	5718	2006	953
1638	1194	403	796	5732	2011	955
1642	1197	404	798	5746	2016	958
1646	1200	405	800	5761	2021	960
1650	1203	406	802	5775	2026	962
1654	1206	407	804	5789	2031	965
1658	1209	408	806	5803	2036	967
1662	1212	409	808	5818	2041	970
1666	1215	410	810	5832	2046	972
1670	1218	411	812	5846	2051	974
1674	1221	412	814	5860	2056	977
1678	1224	413	816	5875	2061	979
1682	1227	414	818	5889	2066	981
1687	1230	415	820	5903	2071	984
1691	1233	416	822	5917	2076	986
1695	1236	417	824	5931	2081	989
1699	1239	418	826	5946	2086	991
1703	1242	419	828	5960	2091	993
1707	1245	420	830	5974	2096	996

EQUIVALENCIAS PARA MULTIESCALA						
1/35	1/48	1/56	1/72	1/100	1/285	1/600
cm	cm	pulg	cm	mm	mm	mm
1711	1248	421	832	5988	2101	998
1715	1251	422	834	6003	2106	1000
1719	1253	423	836	6017	2111	1003
1723	1256	424	838	6031	2116	1005
1727	1259	425	840	6045	2121	1008
1731	1262	426	842	6059	2126	1010
1735	1265	427	844	6074	2131	1012
1739	1268	428	846	6088	2136	1015
1743	1271	429	848	6102	2141	1017
1748	1274	430	849	6116	2146	1019
1752	1277	431	851	6131	2151	1022
1756	1280	432	853	6145	2156	1024
1760	1283	433	855	6159	2161	1026
1764	1286	434	857	6173	2166	1029
1768	1289	435	859	6187	2171	1031
1772	1292	436	861	6202	2176	1034
1776	1295	437	863	6216	2181	1036
1780	1298	438	865	6230	2186	1038
1784	1301	439	867	6244	2191	1041
1788	1304	440	869	6259	2196	1043
1792	1307	441	871	6273	2201	1045
1796	1310	442	873	6287	2206	1048
1800	1313	443	875	6301	2211	1050
1804	1316	444	877	6315	2216	1053
1808	1319	445	879	6330	2221	1055
1813	1322	446	881	6344	2226	1057
1817	1325	447	883	6358	2231	1060
1821	1328	448	885	6372	2236	1062
1825	1331	449	887	6387	2241	1064
1829	1334	450	889	6401	2246	1067
1833	1336	451	891	6415	2251	1069
1837	1339	452	893	6429	2256	1072
1841	1342	453	895	6443	2261	1074
1845	1345	454	897	6458	2266	1076
1849	1348	455	899	6472	2271	1079
1853	1351	456	901	6486	2276	1081
1857	1354	457	903	6500	2281	1083
1861	1357	458	905	6515	2286	1086
1865	1360	459	907	6529	2291	1088
1869	1363	460	909	6543	2296	1091

EQUIVALENCIAS PARA MULTIESCALA						
1/35	1/48	1/56	1/72	1/100	1/285	1/600
cm	cm	pulg	cm	mm	mm	mm
1874	1366	461	911	6557	2301	1093
1878	1369	462	913	6571	2306	1095
1882	1372	463	915	6586	2311	1098
1886	1375	464	917	6600	2316	1100
1890	1378	465	919	6614	2321	1102
1894	1381	466	921	6628	2326	1105
1898	1384	467	923	6643	2331	1107
1902	1387	468	925	6657	2336	1109
1906	1390	469	927	6671	2341	1112
1910	1393	470	929	6685	2346	1114
1914	1396	471	930	6700	2351	1117
1918	1399	472	932	6714	2356	1119
1922	1402	473	934	6728	2361	1121
1926	1405	474	936	6742	2366	1124
1930	1408	475	938	6756	2371	1126
1934	1411	476	940	6771	2376	1128
1939	1414	477	942	6785	2381	1131
1943	1416	478	944	6799	2386	1133
1947	1419	479	946	6813	2391	1136
1951	1422	480	948	6828	2396	1138
1955	1425	481	950	6842	2401	1140
1959	1428	482	952	6856	2406	1143
1963	1431	483	954	6870	2411	1145
1967	1434	484	956	6884	2416	1147
1971	1437	485	958	6899	2421	1150
1975	1440	486	960	6913	2426	1152
1979	1443	487	962	6927	2431	1155
1983	1446	488	964	6941	2436	1157
1987	1449	489	966	6956	2441	1159
1991	1452	490	968	6970	2446	1162
1995	1455	491	970	6984	2451	1164
1999	1458	492	972	6998	2456	1166
2004	1461	493	974	7012	2461	1169
2008	1464	494	976	7027	2465	1171
2012	1467	495	978	7041	2470	1173
2016	1470	496	980	7055	2475	1176
2020	1473	497	982	7069	2480	1178
2024	1476	498	984	7084	2485	1181
2028	1479	499	986	7098	2490	1183
2032	1482	500	988	7112	2495	1185





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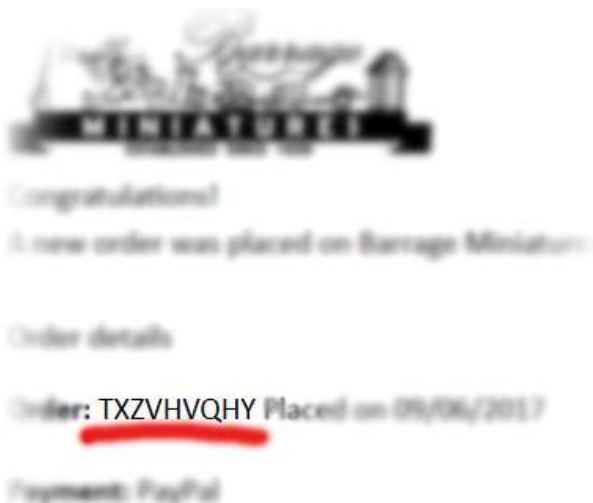
X, Y, Z

ADDITIONAL DATACARDS

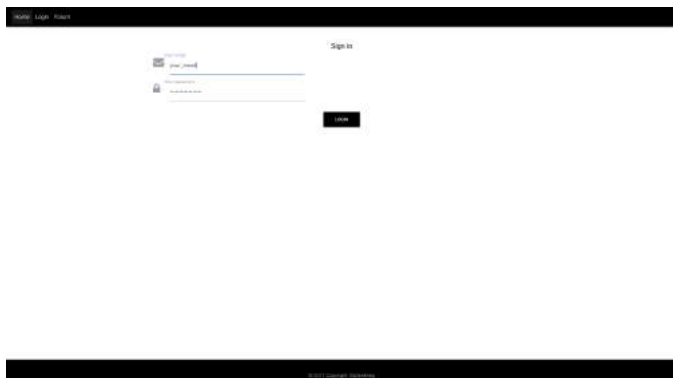
Additional datacards can be purchased from the webpage www.rattenkrieg.com. These datacards are purchased using CREDITS, which can be obtained from the www.barrageminiatures.com homepage.



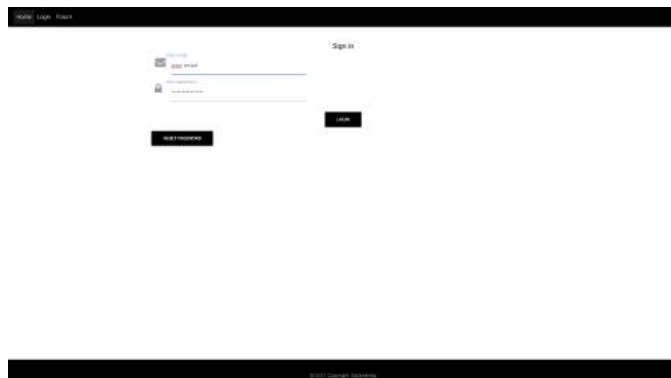
When you purchased this set of rules you received an "Order Confirmation" email from Barrage Miniatures. The Order Code will be used as the password, as long as you don't change it.



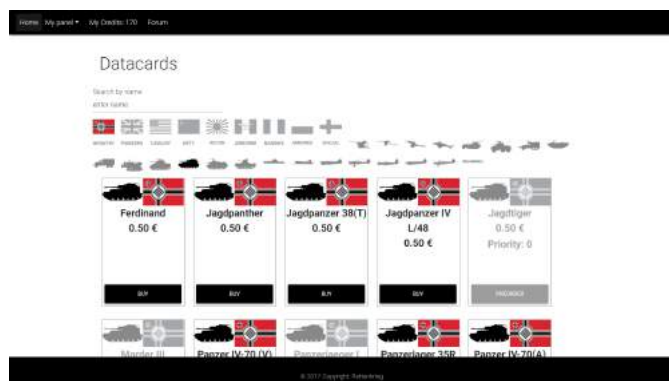
Click on the Login tab and type in your email address and password.



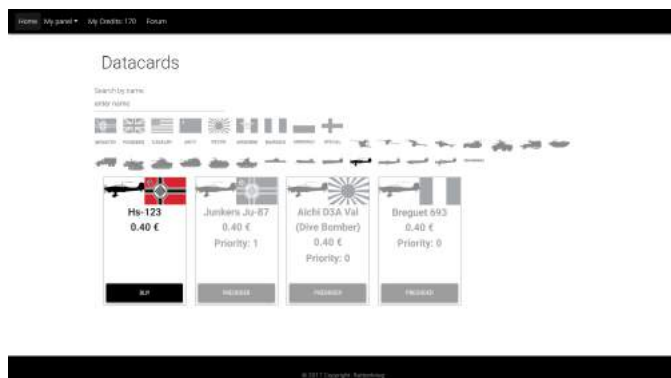
Don't worry, if you can't find that email we sent you, simply write something in the "password" and click on the Login button. The system will tell you that the password is wrong and it will show a new button where you can ask for a password reset. Your password will be sent to your email.



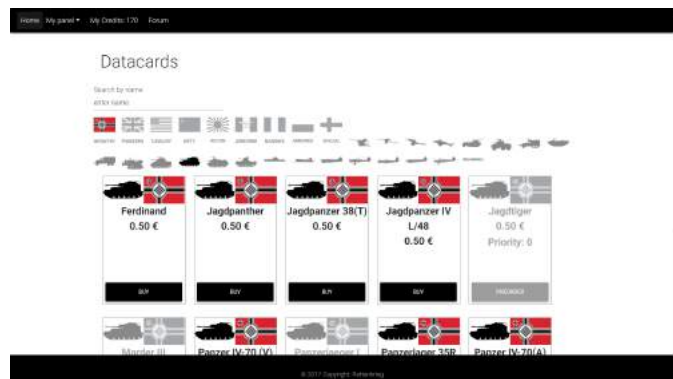
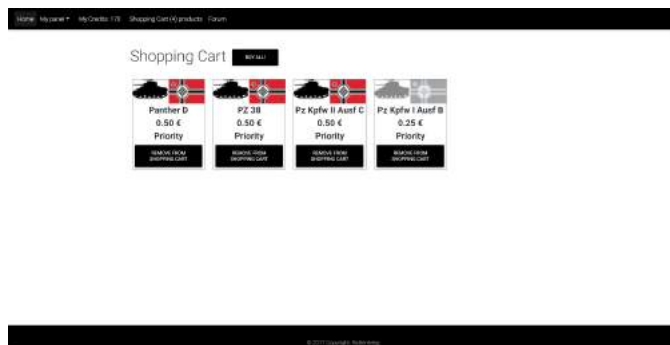
Once you have logged in two new tabs will appear at the top left-hand side of the screen (one of them is My credits: where you will find the number of credits you have to purchase datacards), as well as the main datacards search page.



This page will allow you to carry out searches for different datacards, either by name, by part name, by country, or category. The graphical filters can be activated using the gray "switch" buttons below the "search by name" section. When you activate them, they will become black or colored to show the filter has been applied. To remove these filters simply click on them again and they will go back to grey.



Once you have applied your filters and carried out your search, a list of Datacards with these characteristics will appear below. All Datacards shown in black can be purchased immediately by clicking on BUY.



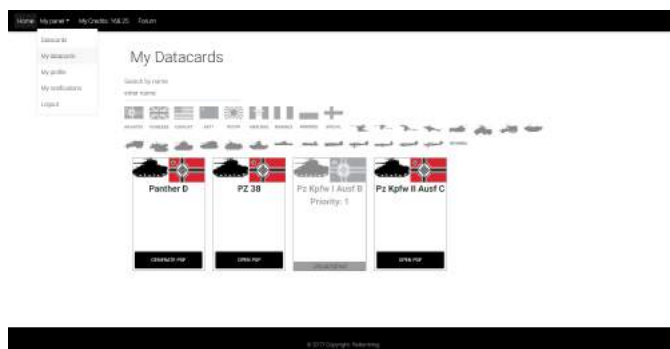
These will then be automatically added to your Shopping Cart, which will then appear on the top left-hand side of the screen.

Grayed-out datacards are work-in-progress. By clicking on the PREORDER button, you will award the card a priority status.

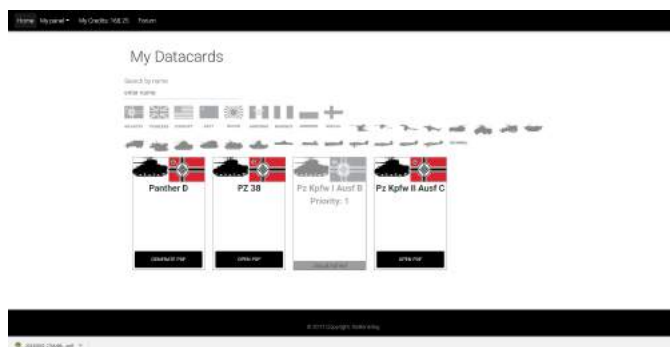
The more preorders (limited to one per client) for these cards, the greater the priority number and precedence will be given to the production of these cards.

Please note that when you chose to preorder any datacard, you will be required to pay 50% of the cost of the card.

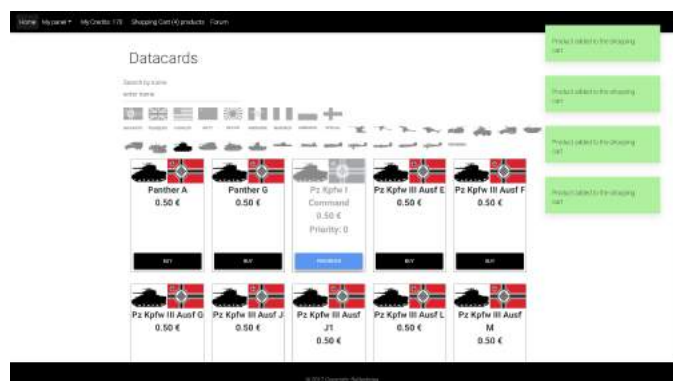
The card will automatically be added to your shopping cart for payment at checkout. You will receive a notification when this datacard has become available and be invited to access your shopping cart to complete the payment.



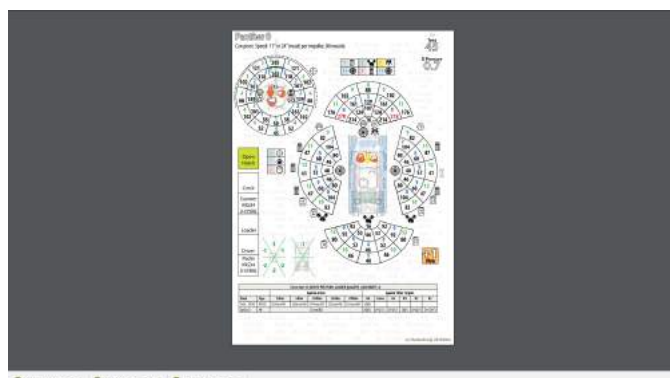
In order to access the datacards, just press the "GENERATE PDF" button. Please, allow the system a few moments to prepare your datacard, and it will be downloaded to your system, or opened (this depends on the device you are using, in this case, the pdf appears as downloaded).



(Once generated, you can open directly the data-card using the "OPEN PDF" button).



Any items can be removed from the cart before completing your final purchase.



Of course, you have access to other options via the “My Panel” drop down list. At this moment, the available options are:

- Datacards (the main page where you can find all the available datacards)
- My datacards (In this section you will see all of your purchased and preordered Datacards. A specific search for one of your datacards can be carried out in the same way as before. Similarly all purchased datacards will appear in black and pre ordered datacards will appear in gray. Simply click on purchased datacards to generate or open the corresponding pdf. You do not need to save this pdf as it will always be stored in your “My datacards” section).
- My profile (This section allows you to make changes to your Profile, including password changes).
- My notifications (This is essentially your “Rattenkrieg inbox”. Notifications such as availability of pre ordered datacards will appear in this section. You will then be invited to complete the purchase of these cards in your shopping cart).
- Logout (To logout of your Rattenkrieg datacards store please click here).

FAQ's

Q: What do I do if I can't remember my login password or no longer have my order confirmation?

A: In this case, introduce your email as normal and any word or number combination in the password section, and click on RESET PASSWORD. An email will automatically be sent to you providing you with a new password. This password can then be changed to one you are more likely to remember once you have logged in, by simply clicking on the “My panel” drop down tab and accessing “My profile”.

Q: What do I do if I have run out of credits or have insufficient credits to complete my purchase?

A: Additional credits can be purchased at any time from www.barriageminiatures.com. They will automatically appear in your Rattenkrieg datacards account when you next login.

OTHER ONLINE TOOLS

We provide the players other tools to make the game easier. These tools don't need to connect to our server once loaded, so they will work offline as long as you don't try to “refresh” them.

The spotting calculator

To use the calculator simply slide the cursors to the values you need and press “Calculate”. The tool will tell you if the element you tried to spot was spotted or not.

www.rattenkrieg.com/spot.php

Enter Spotter Quality 1/6
Enter Distance (in hundreds) 3/5
Enter I-Factor 12/36
Enter Positive Height 3/12
Enter Target Size 5/50
Enter Negative Height 1/12
Enter Target Quality 3/6
Enter Visor Modifier 0/6
Calculate
Enemy element SPOTTED

The Aggressiveness helper

Slide the cursors to the values and press the “Calculate” button. The helper will tell you the which row you should use in the “**AGGRESSIVENESS CHECK AT THE END OF THE TURN**” table.

www.rattenkrieg.com/agg.php

Initial size of element 4/12
Current size 2/12
Aggressiveness 2/6
Calculate
Result 2

Designed and written in Madrid, Spain

Printed in Madrid, Spain

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