

TWO-FISTED PULP SUPERSCIENCE IN A WORLD AT WAR!

GEAR KRIEG



DREAM POD 9



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IN A WORLD AT WAR!





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Dedication

This book is dedicated to the memory of all the men and women who selflessly gave their lives to guarantee our freedom.

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FOR POLAND!

7.92mm rounds cracked past Janos' head like miniature thunderclaps. The German machine gun snarled its song of murder into the bodies of the men and horses following Lt. Janos Sosobowski of the Polish Army's 15th Cavalry Regiment.

"On men... On into them! We have them now!" Janos' voice shrieked out his order, and the answering bellow of hatred from his forty troopers was terrible.

The two-week nightmare of blood and death at the hands of the German Wehrmacht was about to be repaid. Two weeks of slinking and hiding in the forests, half starved and miserable, dodging German infantry, aircraft, tanks and the giant metal men. Janos was hard-pressed to tell which frightened his men more, the wail of the German dive bombers as they stooped for the kill, or the sight of the steel giants lumbering forward, spitting machinegun fire into Polish bodies. The tanks were just simply something to run from. Nothing a cavalry trooper carried could hope to hurt them. Janos remembered the sight of troopers breaking their lances against the sides of the armored vehicles in their frustration, and being mown down in heaps moments later by German machine guns. But today, God had sent Janos a chance to exact a small portion of vengeance for prostrate Poland.

Slinking through the wooded underbrush, Janos' scouts had come upon a bizarre sight. A group of Germans had been clustered around what looked like an eight-legged railway car, stopped on the road that ran through the forest. It had obviously broken down; soldiers were busy working inside open engine hatches. One of the steel giants paced nervously around the clearing, trying to watch every direction at once. The Nazis were not masters of all of Poland yet! Other than the metal walker, the attention of all the Germans was focused on the repair work on what had to be some sort of mobile command post.

Janos had not hesitated, bringing his men up silently to the edge of the clearing; he waited till the metal giant had made its way around to the far side of the command post. Then he let Mikhail, his trumpeter, shatter the stillness of the warm September afternoon with the brazen notes of the charge!

The surprise was total; white-faced Germans froze in shock at the sound of the trumpet's fury. They died that way. Janos' troopers galloped among them, lances stabbing and sabers flashing in the sun. The German survivors of the first onslaught ran willy-nilly, arms upraised in the hope of warding off saber blows. The Poles, laughing like fiends, galloped abreast of them and cut backwards with their sabers, into upraised, panic-stricken faces.

The arrival of the German walker shattered the Polish triumph. Roaring around the front of the command vehicle on its wheels, it slammed into men and horses with a wet, sickening thud. The twin machine guns in its chest clawed at the Poles, splashing blood and broken bodies everywhere. It clubbed more men and horses with its mace-like arms. The cries of wounded and dying men were awful, but the wails of the horses were even more so.

Janos was waiting for the arrival of the metal monster. Touching this spurs to his mare Anna's flanks, he urged her forward, galloping straight for the left side of the German war machine.

Silently commending his soul to the care of the Blessed Mother, Janos kicked free of his stirrups, and leapt for one of the hand-holds welded to the brute's shoulder. If it had not been for his saber knot tying his saber to his wrist, he would have lost his weapon.



The air hammered out of Janos' lungs as he slammed into the machine's shoulder. Boots scrabbling for purchase, the daring hero hauled himself up. He found himself balanced precariously, one foot on on the war machine's chest and one on its shoulder. With a long practiced flick of his wrist, Janos flipped the hilt of his saber into his waiting hand.

"Mein Gott!" The startled cry warned Janos that he had been seen. The German gunner, strapped firmly into his seat, was frantically clawing at the flap of the holster for his service automatic.

"For Poland!" Grasping the roll cage that framed the open cockpit with his left hand, he struck. Janos shouted in triumph as his blade slid home, ending the gunner's life. A sharp twist of the wrist kept the blade from being trapped as Janos withdrew it for another blow. Another violent downward stab and Janos was the only living human aboard the walker. Suddenly bereft of its mind, the metal giant veered sharply toward a tree. Eyes widening in shock, Janos jumped for his life.

The sound of the collision between the old oak and the out-of-control walker was like a hundred blacksmiths banging away all at once. The machine stood against the tree as if trying to push over the forest giant by brute force, then its engine began to idle with a shuddering thump. The whole vehicle shivered and jerked in a strange parody of a mortally wounded man.

The smells of forest loam and blood told Janos he was still alive. He winced as he stood. His left ankle wasn't happy about recent events and was making its displeasure known. Looking around he saw his men had the situation well in hand. Not one single German was still standing.

Eyes bright with excitement, his trumpeter, Mikhail, ran up, clutching some sort of case.

"Look sir! One of the Nazis was trying to run into the forest with this! It must be important, don't you think?"

Mikhail was breathless, gasping with the efforts of his exertions. Janos felt the same; he had to force himself to take several deep breaths before replying.

"Let me see, Mikhail."

Janos took the case, which was surprisingly heavy for what appeared to be a simple typewriter, and opened the catches. Whatever it was, it wasn't a typewriter. It had a keyboard like one, but instead of hammers with letters on them, there were several metal discs with some sort of coded symbols inside. A small brass nameplate with the word ENIGMA was emblazoned on the machine's casing in gothic script.

"What is it, Lieutenant?" Mikhail's eyes were as wide as saucers.

Janos frowned. He stood up, tall and defiant in the late day sun.

"I don't know, Mikhail...but I think you've found something the Nazis are going to be damned sorry to have lost!"



Two-Fisted Pulp Superscience in a World at War!

The world would indeed have been a different place if the Roaring Twenties had not delivered the wonders promised by visionaries. The PzK III armored walker was present at the Berlin Olympic Games, and the first successful American walkers were showcased at the 1939 World's Fair "Futurama" pavilion, among rocket fighters and other marvels.

Later that year, the promises of a bright future powered by advanced science crumbled as German Panzerkämpfers crossed into Poland. The Second World War had begun!

War walkers now stride across the battlefield of Europe, huge supertanks thunder over North Africa, rocket fighters duel high above the Pacific and adventurers and superspies battle the Nazi forces in the shadows. Scientists work feverishly to perfect the next doomsday weapon for their masters.

Powered by advanced science, will the darkness of fascism spread across the world, or can brave men and women prevent it?



THE WORLD AT WAR

"The Second World War formally began on September 1st 1939 with the attack on Poland by the Third Reich. Adolf Hitler's mad dreams were to soak the world in blood, and he, along with his compatriots and their followers were responsible for untold suffering. But what else can be directly attributed to the events of 1939-46? Is it possible that in some ways the human condition benefited in the long run? Many would not agree.

"The War was an arena where savage horror was the norm, and atrocities became commonplace. The previous generation called World War One the 'War to End All Wars.' What naïveté! No one in the pre-1939 world could look forward to what was to come and conceive of where the human race was bound. But on this day, the twentieth anniversary of the founding of Man's first colony on Mars, I would put it to you that there is much good that we owe to those men and women who fought and strove for so long against such a terrible foe. Victory was not assured and indeed, for a long and terrible time, was in serious doubt. But although there was a danger they would fail, and fear of the Axis powers gripped the world, the Allies never gave up. In spite of the horror of the Nazi bombings of London, Coventry and New York, of the untold murders committed in the name of Hitler's mad theories of "racial purity," in spite of the savage inhumanity of Japan's treatment of its war prisoners and captive populations, they never gave up.

"Much of what came out of that terrible time was something I hope mankind will never experience again, but there were many discoveries, which have benefited all of us to this day. The great inventors of that time, Tesla, Einstein, Christie and the rest, have left a legacy of technology that has taken us to the stars. Man has now left the cradle of his infancy, and has taken his first tottering steps into the wider universe. And there have been many other advances, medical, social, economic, and dare we even mention, political as well."

(general laughter from the audience)

"The creation of the United Nations in response to the threat of the Axis, and its eventual evolution into the present Confederation of Mankind is, I'm sure you will concede, a positive outgrowth of the events of World War II. Even to those of you who didn't vote for the current administration."

(more laughter)

"What I propose to do in the balance of this lecture, and in subsequent sessions, is to further explore this theme, and in so doing help all of us to come to a greater understanding of who and what we are as a species, and where we are bound in the future. Because if there is one thing that history has taught us, it is that civilizations that are not heedful of the mistakes of the past are doomed to blunder into them again in the future."

— Excerpt from a lecture given by Professor Donald G. Cameron

Olympica University, Mars, December 2, 2035 AD

A Parallel World

You may be slightly confused after reading the introduction to this book. Bombardment of New York? Colony on Mars? Walkers? The war didn't happen that way!

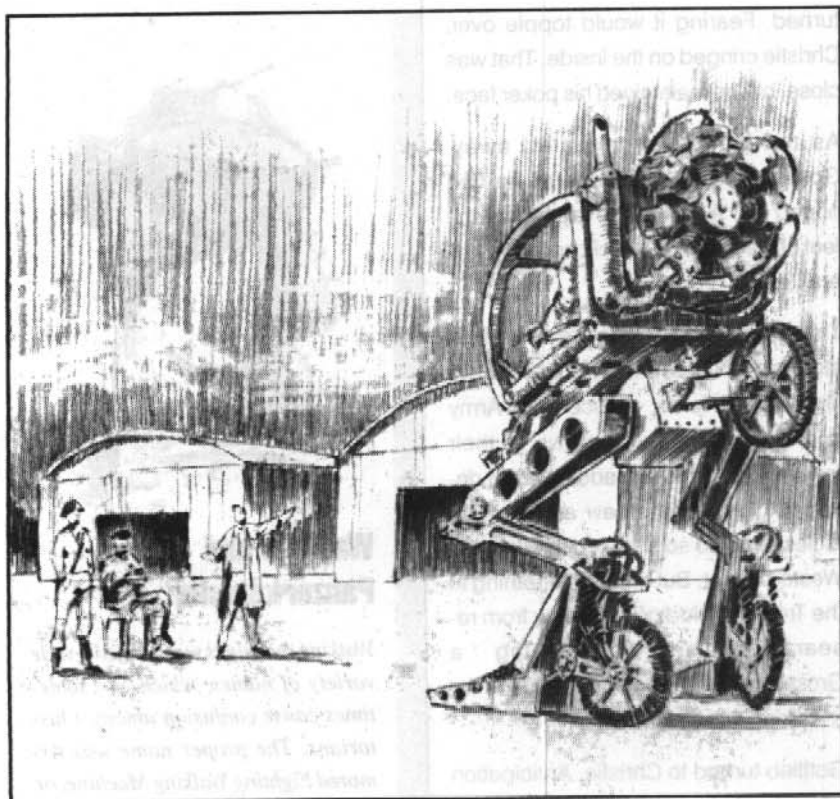
On our world, perhaps. But it did happen, for real, on a world very much like our own.

There, history did not quite take the same road as on ours. The people who inhabit that world are bolder, more curious. Their scientists were simply more lucky, or perhaps the local laws of physics gave them more leeway, but they created many new inventions that would never have been possible in our own past.

Their vehicles were slightly different from ours, too. Though their industry created armored vehicles and planes and many other weapons that bore the same name and general appearance as the ones we know, there were often subtle differences: a larger hatch, a row of bolts holding a radio rack inside the hull, or a slightly more powerful engine.

Technology is not the only difference between our world and theirs. Events did not always unfold in the same way, especially after the first few months of the conflict. Sometimes it was due to different equipment, sometimes to different decisions taken and sometimes it was just blind luck.

The rest of this book — and this game line — is written from an historical point of view in the alternate universe.



THE DEMONSTRATION

J. Walter Christie sat brooding at his desk. He stubbed out the butt of the latest in a long line of cigarettes into an already overflowing ashtray. Sighing, he looked down at the open leather ledger in front of him. Too many red numbers, too few black. If only the U.S. Army had bought the latest prototype... or had even been interested enough to have purchased the patents or offered funding to continue the project. Christie snorted. Five years of work for nothing. All they did was laugh him off with official letters of rejection. Again. And as a result, Christie Motor and Carriage Works would soon be out of business. Permanently.

Christie took a sip of his coffee, grimacing as he realized that it had grown cold. He snapped the accounts ledger closed. There was little to do with it. Setting it to one side, he began sorting through his morning mail. Mostly bills. With a dejected grunt, he tossed them back into his 'In' tray.

As he did so, a small brown envelope fell out from amongst the pile, landing face-up on the middle of his desk. The words 'Western Union' were stamped in red ink across the top of the envelope. Christie tore it open with eager fingers.

... ARRIVING YOUR FACTORY TOMORROW AM STOP...

... MOST INTERESTED IN DEMONSTRATION OF PROTOTYPE STOP ...

... K GOTTLIEB STOP ...

Christie was momentarily stunned with disbelief. He read the telegram again. Who on earth was this 'Gottlieb' character anyway? Then he checked himself. Who gave a damn who the guy was — he was obviously foreign, and probably richer than the combined budget of the U.S. military establishment. Christie had a company to save, and a demonstration to arrange...

Kurt von Gottlieb, Major of the Reichswehr, the Army of Germany's Weimar Republic, stood shivering in the early morning chill. He blew into cupped hands and chafed them together, smiling as warmth was restored, albeit temporarily, to his chilled fingers. Tarnberg, his aide, proffered a flask of schnapps but Gottlieb casually waved it away. Christie bustled up to them, face flush from a combination of exertion and acute nervousness.

"We'll be ready momentarily, gentlemen. My men are just topping up the fuel tank and checking hydraulics now."

Gottlieb nodded and sat in the wooden chair Christie proffered. All three men looked across the tarmac from their vantage on the reviewing stand to the sheds opposite. Some minutes passed in contemplative silence, then the main shed's doors rolled back, revealing an ungainly and outlandish sight.

It stood twelve feet tall and looked for all the world like an oversized suit of armor suitable for a gorilla, albeit shorn of helmet and arms. The chest was open and a man sat in the opening, strapped in and protected by an array of sturdy-looking roll bars. Tarnberg snorted mockingly; a stabbing glare from Gottlieb silenced him. Christie cleared his throat.



"Er, gentlemen, the W1926, featuring my patented Mechanical Walking Suspension!"

With that, the machine's engine shuddered to life. The tarmac reverberated with the crash as its right foot lifted and then slammed down on the concrete surface, soon followed by the left. The engine belched blue-black smoke, and the cacophony of hydraulics and feet thumped and hissed, creating an almost melodic beat which the machine seemed to match with every rhythmic step.

"Mein Gott! " Tarnberg gasped. "It truly can walk!"

Christie smiled at his guests, all the time praying that his test pilot would remember to stop after advancing 120 feet; the damned thing never could walk more than 150 feet at a go without falling over. He breathed again as Test Pilot Lauter remembered his instructions and stopped the W1926 on its marker. The machine seemed to almost slouch as it ground to a halt.

Gottlieb looked coldly at Christie. "You have promised a greater rate of speed than I can imagine this machine capable of, Herr Christie."

Christie smiled. The bait was set, now to spring the trap... He stood and waved to Lauter. The pilot responded with a thumb's up. Suddenly the W1926 folded like a man with abdominal cramps, hydraulics deploying new mechanisms. The radial engine howled and the entire contraption shuddered as Lauter poured on power. The machine began rolling toward the reviewing stand, accelerating rapidly as it came, upon a set of oversize wheels that now protruded from its feet and back. At the last possible second, Lauter veered away, the machine heeling over alarmingly as it

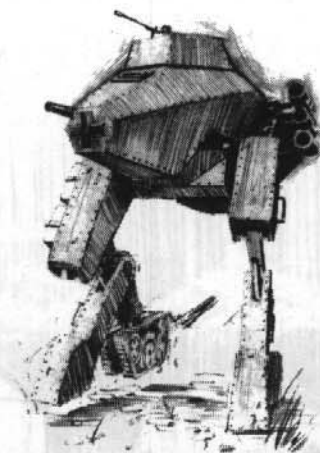
turned. Fearing it would topple over, Christie cringed on the inside. That was close, but he maintained his poker face.

As the W1926 accelerated away, Gottlieb exulted. This was all he had hoped for! A triumph to lay before the feet of General von Seeckt and the General Staff!

The hated Treaty of Versailles had stripped a defeated Germany of her fledgling air force, reduced her Army and Navy to mere shadows of their former might, and forbade her from developing any of the new armored vehicles that had so shocked them on the Western Front. But there was nothing in the Treaty forbidding Germany from researching and developing a Grossarbeiter, a peaceful pretence for a walking war machine!

Gottlieb turned to Christie. Anticipation warred with fear on the inventor's features. As the German spoke, though, the fear washed away under a wave of triumph.

"Now then, Herr Christie, I am most interested in acquiring your machines for our Grossarbeiter — the large worker — for our program to rebuild our shattered country and economy. Shall we retire to your office to discuss matters of financial compensation?"



Walkers and Panzerkämpfer

Walking machines were called a wide variety of names, which can sometimes cause confusion amongst historians. The proper name was Armored Fighting Walking Machine, or, more commonly, Armored Walker or just walker. The Germans called their walkers Panzerkämpfer or just Kämpfer. The Japanese called their walkers oshi-moi, or "heavy feet," a derivation of ashiguru (literally, "light feet") infantry from Feudal Japanese history. The Soviets referred to their walkers as Samoihodnaya Machina, or Walking Machine, though the unofficial name was always "Stubborn Steel Brother."

There were several slang terms applied to all walkers, but only the term "gear" was generalized. The actual history behind this term has been forever lost, but it is generally accredited to American and British walker crews who often said that the myriad of hoses, cogs and hydraulics made these machines nothing more than glorified clocks. Throughout this book, however, "walker" is used to describe an Armored Walker from any nationality.

THE WAR IN EUROPE

(1939-1940)

The Second World War was a conflict that truly touched the entire globe. From the fields of Western Europe to the vast expanses of the Pacific Ocean, no part of the planet would remain untouched by the fury and misery of the War. The political leaders of the conflict ran the entirety of the spectrum, from Fool to Genius, and from Hero to Fiend. By 1939 the lines had been drawn for those who could see or cared to look. Good and evil were about to clash in a titanic struggle, one that would decide the fate of world history for generations to come.

The declaration in the 1920's that the First World War was the "War to end all Wars" was only wishful thinking. Rather, as France's Field Marshall Ferdinand Foch, himself a onetime Allied Commander in World War One, was to say of the Peace of Versailles, which ended that conflict: "This is not a treaty of peace, it is a guarantee of war in twenty years." These words would prove to be oddly prophetic.



• THE STORM CLOUDS BREAK: POLAND (SEPTEMBER 1 - 18, 1939)

"War is an extension of politics by other means."

— Von Clausewitz, *On War*

Poland was high on the list of Hitler's territorial ambitions, for it represented some of the more humiliating aspects of the Treaty of Versailles. After the Great War, Germany lost a great deal of territory to Poland as war reparations, and

Hitler burned with a desire to crush it and join East Prussia with Germany once again. Plans to invade Poland were developed as far back as 1936, but the invasion that took place in 1939 was different in its scope and outcome than anything anyone could have imagined.

On the morning of September 1, 1939, the German Luftwaffe began the westward invasion with widespread bombing of Polish cities, factories, airfields and lines of communication. In the en-

suing chaos, German forces ground forward from Germany, Slovakia and East Prussia. Two days after the invasion began, with all diplomatic initiatives spurned by Germany, Britain and France declared war. So began the Second World War.

By September 7, German forces were within twenty-five miles of Warsaw. Poland's remaining forces were either destroyed or encircled into isolated pockets, with the largest concentrations centered on Warsaw and Kutno. By the 9th, German forces were tightening the noose around the capital, and, despite valiant resistance, the remnants of the Polish forces could now only retreat eastward. Fighting continued for several more days, with a spirited Polish counter-attack at the River Bzura momentarily stalling the German advance.

The greatest treachery, however, came from the east. As part of their Non-Aggression Pact, Hitler and Stalin had secretly agreed to the division of Poland between Germany and the Soviet Union. Though 'unable' to participate for the early part of the invasion, Stalin feared Germany would take all of Poland, and commenced his invasion on September 17. Caught between two immense invaders, Polish forces were inevitably and totally crushed.

Though sporadic resistance was to continue until the end of September, Poland was effectively conquered in a little over three weeks. The world was aghast at the sheer ferocity and totality of the war but could do little to prevent its ultimate outcome. As Germany digested its conquest, Europe was to settle into an uneasy and fitful peace.



Lightning War

Blitzkrieg (Lightning War) was, surprisingly, a term coined by American papers later in the war and used to describe the type of warfare waged by Germany in its invasions throughout Europe. The secret to Blitzkrieg's success lie in speed, exploitation of the enemy's weakest point and a close relationship between air and ground forces. As bombers disrupted communications, an armored thrust would break through an enemy's front, and the tanks would fan out from there. Infantry and lighter armored forces would then follow up to mop up encircled pockets or destroy strong points that would be ignored by the first wave.

Walkers proved to be an ideal weapon for Blitzkrieg tactics. Their speed and adaptable movement allowed them to fill a scout, shock or mop-up role depending upon the circumstances. First unsure of their effectiveness, German military planners relegated their available walkers to scout and mopping-up duty. Their psychological value, however, combined with an unexpected battle with Polish armor at the town of Sochaczew, vindicated Heinz Guderian's vision of walkers on the modern battlefield. By the time of Germany's invasions of France and the Low Countries, walkers were an integral part of Germany's mobile warfare tactics.



• THE PHONY WAR (OCT 1939 - MAY 1940)

France and Great Britain had declared war to protect the integrity of the Polish state, but other than sending a few bombers to drop propaganda leaflets, they had, as of yet, done nothing material. On October 6, in an address to the German Reichstag, Hitler called on France and Britain to recognize the "New Order in Europe." Daladier, the French Prime minister, rejected Hitler's terms on October 11. Great Britain's Prime minister, Neville Chamberlain, the man who thought he could negotiate with "Herr Hitler" after the Munich conference of 1936, needed an extra day to dismiss Hitler's peace proposals.

So began a curious period of the war, a kind of last deep breath before the plunge. None of the combatants appeared to want to take any action to widen the conflict beyond its current borders. The French were happy to sit behind their high technology Maginot Line, secure in the fact that they could fight this war as they had fought the last one — defensively. The sheer destructive power of their "Death Ray Gun" emplacements would shatter any assault upon the soil of France. Britain, wracked by internal dissent in Chamberlain's government, vacillated. Bombing raids and pamphlets were as far as Chamberlain wanted to go.

FINLAND

The Germans too, sat quietly behind their lines. It seemed a quiet "Phony War," or "Sitzkrieg" as the newspapers of the day dubbed it. Germany's complacency, however, was deceiving. The Wehrmacht was remarshalling itself after the Polish campaign, preparing to execute the Führer's latest directive, Number 6 - Case Yellow, the invasion of

the Low Countries and of France itself. The shame of 1918 was to be washed away in the blood of the Reich's enemies.

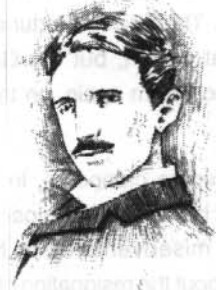
But all was not farce in the latter half of 1939. Stung by criticism, Chamberlain was forced to make a concession to those in the British government who felt he had not been prosecuting the war with the vigor it deserved. Chamberlain invited Winston Churchill into his government, offering Churchill the post of First Lord of the Admiralty, a post he had previously held in the First World War. From that point on, the Royal Navy began to take the war to the Germans.

In Moscow too, Stalin had decided that he could play Hitler's game: the victim he selected was Finland. After wrangling for months with the Finns, and goading them to the point that the Finnish delegation walked out of the conference en masse (Stalin made outrageous demands on Finnish territories, including takeover of the entirety of the Gulf of Finland), the Soviet leader had the pretext he needed to go to war. On the 30th of November, the Red Army invaded Finland across the Karelian Isthmus. Underestimating the spirit of the Finns, they only committed the units of the Leningrad military district to the initial assault. This proved a fatal error for the Red Army, as the outnumbered Finns retreated before the oncoming Russians and used the land, hard in the grip of the coldest winter in over twenty years, against the invaders. The invaders, forced to keep to main roads due the inefficiency of their preparations, were harassed constantly by the Finns, who struck and then melted back into the snow-covered forests. The Russian soldiers, unequipped to fight in such conditions, could not pursue.



To the astonishment of the world, the Finns managed to hold off the Soviet juggernaut for four months, finally surrendering on March 13, 1940. The Finns, who never managed to put more than 200,000 men in the field, had engaged a force of forty-five Russian infantry divisions, four cavalry divisions and twelve armored groups. During the course of the conflict, the Finnish army suffered some 25,000 killed in action; the Russians counted 200,000 dead.

The Winter War of 1939-40 illustrated to an appalled Stalin just how unready his vaunted Red Army was to prosecute a modern war. His vicious purges of the Army's officer corps in the 1930s were directly responsible for the drubbing the Red Army received at the hands of the Finnish Marshal Mannerheim. After the war in Finland, Stalin launched a crash program to rebuild and try to repair the army's shortcomings, but was unable to complete it before the Germans invaded Russia in 1941. The stubborn refusal by Stalin to permit the development of walker technology by the Red Army proved to be a critical miscalculation in the Russian plans. He was convinced the entire idea was a "capitalist folly" that was unnecessarily expensive and complex. The Red Army, he declared, needed supertanks, with heavy armor and multiple turrets, to achieve any kind of military victory. The failure of the Soviet T-28 tanks in the Winter War was glossed over by the self-assured Stalin, and anyone who tried to convince him otherwise was prone to disappear. It was to prove a costly miscalculation, with terrible consequences for the Russian military in 1941.



Nicola Tesla and the Maginot Line

Born in the Balkans, later a naturalized U.S. citizen, Nicola Tesla was perhaps the most brilliant scientific mind in an age of scientific genius. Like J. Walter Christie, he found little acceptance or recognition for his schemes in his own country at first. A true philanthropist, he spent much of his early career developing ways and means to make electrical energy available to better the human condition world-wide. When his American backers pulled out in the late 1920s, it was France that came to Tesla's rescue.

Tesla was not interested in creating offensive weapons, but when the French government offered to fund his research on his concept for a defensive "Beam Weapon" capable of destroying any conventional attacker, Tesla could not ignore the challenge. Dubbed "Death Rays" by the world press at their unveiling in 1935, the "Electrically Accelerated Energy Cannon" seemed to be an absolute guarantee of French national security. Coupled with the vast static defenses of the newly completed Maginot line (named after the Defense Minister who began the project) along France's German frontier, the French government was complacently certain that Tesla's super-weapon would render the Republic safe from any attacker.

The Molotov Cocktail

The Winter War also was responsible for introducing a new weapon to warfare: the infamous Molotov Cocktail.

Used against Russian tanks with great success by the Finns, the Molotov Cocktail was a simple weapon: a glass bottle filled with gasoline and stoppered at the neck by a rag. When the rag was lit, the bottle was hurled onto the engine deck or turret of an enemy tank, often with explosive results. The burning petrol would seep through the ventilation grills and any other available opening to ignite the vehicle's engine, fuel tank or crew compartment.

The weapon was named after Soviet Foreign Commissar Molotov, one of Stalin's inner circle and the man responsible for manufacturing the diplomatic incident Stalin needed to declare war on the Finns. Interestingly enough, the Russian soldiers would later make good use of the Molotov against the Germans during the urban fighting on the East Front.





THE NARVIK ADVENTURE

In Britain, Winston Churchill had been active. Convinced that the German dependence on Swedish iron ore was a glaring weakness, he became determined to exploit it. The ore shipments were usually sent to Germany by way of the Norwegian port of Narvik, so on April 3rd, Churchill obtained the War Cabinet's permission to mine Norwegian territorial waters, a blatant violation of Norwegian neutrality. The British and French also readied an Expeditionary Force to land in Norway, planning to sail on April 8th. British Prime Minister Chamberlain publicly declared in a speech that "Hitler has missed the bus."

Unfortunately for the Allies, Hitler and the German High Command were one step ahead of them. The German occupation force set sail for Norway on the morning of April 7th; the invasion began on April 9th. The German heavy cruiser *Blücher* was sunk by Norwegian coastal batteries at Oslo, and the light cruisers *Karlsruhe* and *Königsberg* were lost off Bergen, but this was the extent of German losses. Simultaneously, German troops invaded Denmark, conquering the entire country in a single day.

The first Allied contingents began landing close to Narvik on April 16th. All of the Allied efforts in Norway were doomed to failure: the Allied forces were woefully under-equipped, especially the British, who had no winter equipment, nor air support, tanks or walkers. The French, who sent much more prepared Alpine troops, still managed to leave the bindings for their skis behind. Hampered on land by the lack of properly trained and equipped troops, the British and French were mercilessly pounded from the air by the might of the German Luftwaffe. The lesson that mod-

ern war could no longer be waged without proper air support had been demonstrated. The Allies unfortunately ignored that lesson, but the Germans would teach them again, on the fields of France.

The Norwegian campaign, in one respect, did have a lasting impact on the war. The misadventures in Norway brought about the resignation of Neville Chamberlain and his immediate replacement by Winston Churchill on May 10th, 1940.

• THE INVASION OF WESTERN EUROPE (MAY 1940)

In the west of Europe all was quiet with anticipation. On the morning of the 10th of May, 1940, the Wehrmacht unleashed its blitzkrieg on Holland and Belgium. At 5:30 AM, the German Fallschirmjäger (paratroopers) dropped over Rotterdam, Holland, using a football stadium as their drop zone. Their mission was to secure the vital bridges across the Rhine estuary. Reaching the bridges in minutes by hijacking a public trolley and several vehicles, the paratroopers rapidly seized their objective. Comrades flown in by flying boats reinforced them shortly thereafter. These paratroopers were astonished to be helped ashore by Dutch civilians, who were convinced the German invaders were Dutch troops!

At the same time, another unit of the Fallschirmjäger was carrying out an even more dangerous assignment: Operation Granite, the capture of the vital Belgian fortress of Eben Emael. The mission was carried out by eighty German paras who landed on top of the fortress with gliders. Using special shaped charges to take out critical gun emplacements, the paras were able to repel the Belgian garrison's attacks and hold on until they were reinforced later in the morning by

three glider-deployed Loki-class Panzerkämpfers. Deployed from their gliders and in action within ten minutes, the walkers were instrumental in breaking up the Belgian garrison's counter attacks throughout the rest of the day. Eben Emael surrendered the next day; the supposedly impregnable fortress had held out for less than twenty-four hours. The Wehrmacht's official magazine *Signal* featured photos of the haggard but jubilant Kämpfer crewmen being paraded around the glacis of the fortress by the grinning paratroopers.

• THE BATTLE FOR FRANCE (MAY 10 - JUNE 1940)

On the morning of May 10th, the Anglo-French Armies stationed on the border began their advance into Belgium as planned. The Germans had violated Belgian neutrality first, and so the Allies felt free to meet the Germans head on before they reached the French frontier. The British and French, however, had made a disastrous miscalculation: the Ardennes forest, stretching almost a third of the way from the end of the Maginot Line to the English Channel along the Franco-Belgian border, was considered to be impassable by a modern army. In this, as in so many other instances that fateful year, the Allies were to be proven fatally wrong. The French stationed only twelve weak divisions in the whole sector, and the main thrust of the Wehrmacht's drive into the West would fall on their heads.

The German attacks on Holland and Belgium were designed to draw the Allies out, and make them think that the German High Command was going to follow the same sort of strategy they had used in World War One. The Wehrmacht, however, had no intention of doing so. The Ardennes offensive would hook west and then north, trapping the bulk



of the Allied armies in Belgium. By cutting their supply lines, the trapped French and British would be quickly destroyed.

By the 13th of May, General Guderian's forces had crossed the River Meuse at Sedan. The French had yielded the left bank without firing a shot, after first blowing up all the bridges. All but one — an old weir that the French felt would lower the river level too much if destroyed was left standing and unguarded. It was found by one of Guderian's subordinate commanders, General Erwin Rommel, who quickly ascertained that the weir would bear the weight of his Kämpfers and Panzers.

By the afternoon of May 14th, the Germans had torn a fifty mile-wide breach in the Allied lines. By the 16th of May, the Commander-in-Chief of the French army, General Gamelin, announced that he could no longer take responsibility for the defense of Paris, and recalled the Anglo-French armies out of Belgium. In spite of counter-attacks by Colonel (later General) DeGaulle from May 17th to 19th north of Laon, the German Blitzkrieg rolled on unchecked.

The French Army was unable to cope with the modern tactics of the Germans. The French had large numbers of armored fighting vehicles, including the multi-turreted Grogard ("Grumbler," the nickname of Napoleon I's Grenadiers of the Imperial Guard) tanks, but they had spread them out in loose formations over broad areas, unwilling to commit them for any role other than infantry support; incredibly, most of the French vehicles had barely enough fuel to move themselves fifty miles. The victorious Germans rolled right over them and hooked north to the Channel.

Early in the morning of 20th of May, Rommel's troops occupied the heights around the town of Arras. The British Expeditionary Force, along with all the French troops in Belgium, were perilously close to being cut off. The deadly anti-tank fire of Rommel's 88-caliber guns and the hit-and-run attacks of his Kämpfers against the lumbering and slow British machines smashed the Allied counterattacks on the German positions. The few Cavalier crews with the British Expeditionary Force hurled their walkers at the enemy with all the dash of the Light Brigade at Balaclava, and they were just as doomed. Unable to break the German noose, it was time for the British to retire to the Channel ports.

The British began to withdraw, and the race was on to evacuate as many as possible back to Britain. Cooperation between the French and British in the field was now almost totally non-existent. The Germans reached the Channel port of Boulogne on May 25th; the same day British forces began to reach Dunkirk.

Churchill, realizing that his frantic attempts to prop up a defeatist French regime had come to naught, ordered the evacuation of the BEF from France; the Royal Navy began Operation Dynamo at Dunkirk on May 27th. The next day, Belgian King Leopold surrendered unconditionally to the Nazis. Operation Dynamo continued until June 4th; the last ship, the Royal Navy destroyer *Shikari*, embarked French troops of the rearguard and steamed out of the harbor at 3:40 am. By dawn, German troops swarmed the Dunkirk beaches.



Operation Dynamo

In the seven and a half days of Operation Dynamo, the Royal Navy attempted to rescue 338,226 troops, 120,000 of these French and Belgian in origin. The Admiral in command, Sir Bertram Home Ramsey, mobilized every available ship on the south coast of England: yachts, ferries and fishing boats, as well as Navy ships, were responsible for the "Miracle of Dunkirk." Stirred by this example, Winston Churchill declared in the House of Commons on June 4th: "We shall fight on the beaches, we shall fight in the fields, we shall defend our island...and we shall never surrender." All of the evacuated troops, however, left with no other equipment beyond their rifles. All the surviving tanks, artillery guns and walkers were either destroyed or abandoned on the Dunkirk beaches.

Britain found herself in the position of having only one fully equipped division available for the defense of the home islands, and the soldiers in that division were not even British! It was the Canadian First Division, freshly disembarked from their transatlantic transports, that would have to bear the brunt of a prospective Nazi invasion.



• THE DOOR SLAMS SHUT (JUNE 5TH, 1940)

"The Battle of France is over. The Battle of Britain is about to begin!"

— Winston Churchill in a speech to the House of Commons, 1940

With the British Expeditionary Force battered and withdrawn home to Britain, the Wehrmacht turned on the remnants of the French Army. On June 5th, the Germans began their assault on the French defenses at the Somme. Within four days, French forces there had been completely routed.

On June 10th the French Government evacuated Paris; the French Commander, General Weygand, advocated surrender, but the French Prime Minister Paul Reynaud, encouraged by Churchill, demanded a fighting spirit to the end.

The next day, Mussolini's fascist Italy declared war on France and Britain, and sent its troops into southern France. Though in disarray and demoralized, French troops were able to stop the Italian forces cold, blunting Mussolini's ambitious dreams of owning a part of the French territory.

The Wehrmacht kept up the pressure on the beleaguered French forces. On June 14th, units of the Wehrmacht's army group C penetrated France's vaunted Maginot line. The feared "Death Rays" were unable to repulse the cunning of the Nazi war machine: the huge armored turrets of Tesla's "Electrically Accelerated Energy Cannon" were put out of action, one by one, by robotic eight-legged mines, nicknamed Kuchenschabe (cockroaches) by their inventors. With the lightning guns out of action, the Germans unleashed massed artillery on conventional emplacements

of the Maginot Line. What had taken the Third Republic a decade to build, the Nazis had shattered in a matter of days.

This, if nothing else, proved that this war would be a war of fire and movement, not static defense. On the same day the Maginot line collapsed, the Nazis occupied Paris. It was too much for the French Leadership; two days later Reynaud was replaced as Prime Minister by the 80 year-old Marshal Petain, a hero of the First World War. But Petain had no stomach for this war, and ordered the transmission of a request for an armistice at 11:00 pm that evening. Six days later, in the same railway car in the Compeigne forest that was the site of the German surrender in World War One, France surrendered to Nazi Germany. When the ceremony was concluded, Hitler ordered the railway car destroyed. German honor had been avenged.



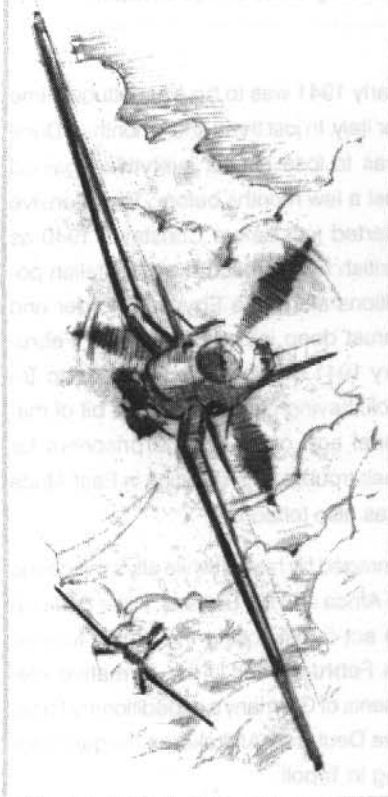
Breaching the Maginot Line

The Wehrmacht Generals knew that a conventional assault on the Maginot line would be suicide. The huge "Death Ray" cannon of the inventor Nicola Tesla would destroy Kämpfers and Panzers and roast infantrymen. Aerial bombardment was not an option, as the Luftwaffe did not yet have bombers large enough to carry the weight of any bomb big enough to pierce the concrete and steel casements. So in the mid 1930s, German inventors were instructed to develop a way to neutralize the cannon. After several embarrassing false starts, including an attempt at creating a huge electromagnetic reflector which failed spectacularly, killing over thirty researchers, the solution, shockingly simple, emerged.

One of the think-tank scientists, Karl-Johann Muller, had been involved in early work on the Panzerkämpfer project. He reasoned it would be possible to construct an eight-legged chassis that ran on a simple two-stroke engine, and could carry a shaped charge payload that had an excellent chance of damaging the Tesla cannon emplacements. Remote control would enable the machine to reach its target. After several prototypes had been tested and demonstrated for the Führer, it was decided to implement "Operation Infestation." The plan called for the "cockroaches," so nicknamed for their ovoid chassis shape and multi-legged means of locomotion, to be moved into place under cover of darkness by the infantry. Then the Kuschenschabe would be released, and, with a dozen aimed at each of the thirty Tesla Cannon turrets, success would be assured. And it was: the ambulatory mines swarmed over their targets with a success rate of almost 70%!

The Battles of Britain and the Atlantic

With the conclusion of the Battle of France the conflict entered a new phase, one that the German Military machine was not as well equipped to win. Triumphant on land, Germany now had to face Britain in the air and on the sea, theaters in which her might was much less imposing. The Luftwaffe was designed as a tactical support air force, and was unable to achieve the goals Hitler set for it in the Battle of Britain, in spite of the posturing of its chief, Reichsmarshal Herman Goering. Similarly, the German Kriegsmarine was unable, even with Admiral Karl Denitz's Wolf Packs, to shut off British supply lines in the Battle of the Atlantic. Both failures made it possible for the British, with support from the Commonwealth and the United States, to continue the war.



THE WAR IN NORTH AFRICA (1939 - 1941)

"When this war is over it will be enough for a man to say, *I marched and fought with the Desert Army.*"

— Winston Churchill

North Africa was one of first major battlefields of the war, and the first theatre where the Allies were able to lock horns with the Nazis and perhaps stem the tide of their seemingly-unstoppable advance. The desert campaign, which would later become known simply as the Desert War, was epic in its scale and the sheer scope of the gains and losses. Advances and retreats were measured in hundreds, even thousands, of miles.

Men lived and died under the merciless gaze of the sun, and the featureless miles of sand and rock swallowed up entire formations of lost or dazed combatants. The desert itself was a feared and respected enemy of both sides and all learned to scratch a living and survive in the most sterile region on the planet. The harsh conditions led the men to adopt several local customs for survival purposes, and the desert armies and their troopers were quite distinctive in uniforms and equipment.

Amid the cacophony of local bazaars and cool, shady cafés, mysterious agents from all sides plied their own peculiar trade in secrets, sabotage and assassinations. Troop movements data, secret blueprints, guns and gold, anything was for sale as long as you could meet the price. The war in Africa and the Middle East was as dark as it was epic.





Intrigue in the Sun

The Moroccan sun beat down like a hammer on Phillip's head. His hat did little to mitigate its effects: sweat poured down his sunburned features, following the lines of his square jaw. England's cool and rainy spring weather had not prepared him for this climate, not at all. Not all the sweat was from the temperature, however. Some of it was from fear. He had arranged to meet Ferooz here in the Casbah to get the latest packet of documents to be forwarded on to the SOE offices in London. But when he got to the back room of the seedy little Casbah café Ferooz had insisted upon, it was already too late.

The fat little Moroccan merchant was lying face down in a pool of his own blood, the hilt of an ornate knife jutting from his back. As Phillip scanned the room for the documents he had come for, the door on the opposite wall exploded inwards. Trap! As the first two men hurled their way through the door, Phillip drew his Browning automatic and shot both of them twice each, just like his training sergeant had instructed so many months ago. "Twice to be sure, sir!"

The searing pain in his right shoulder spun him around to face the other entrance. His Browning dropped to the floor from nerveless fingers.

An evil looking Aryan superman type stood in the doorway, a sneer right out of the cinemas on his face. Phillip almost expected him to start twirling a little mustache between his nicotine-stained fingers.

"So, Englander," hissed the German spy, brandishing a knife twin to the one stuck in Phillip's right shoulder, "for you the war is over now, Ja?"

"Oh bugger!" Phillip thought, and launched himself at the arrogant Nazi...

• ALL ROADS LEAD TO ROME

Even before the War, Africa had been the scene of international tension. Italy, realizing its dreams of Empire reborn, invaded Ethiopia in 1935 and withdrew its membership from the League of Nations over its territorial ambitions a year later, throwing the League into disarray. With the fall of France in 1940, all of France's colonies in North Africa, the Middle East and East Africa reverted to Axis territory by default; Italy was now the largest military and naval power in the region.

Mussolini didn't waste any time. Seizing what he thought was the initiative, Il Duce ordered his forces into Sudan, Kenya and British Somaliland in mid-1940, swifly occupying them all. In September, Italy invaded Egypt, the seat of

British colonial rule, and claimed the much-prized Suez Canal. However, the mighty invasion force only penetrated 60 miles into Egypt and promptly set up camp, spending the next three months consolidating their defenses and generally doing nothing much in particular.

In October 1940 Italy also invaded Greece, perceived as an easy victory and worthy addition to the Roman Empire. To the contrary, the diminutive Greek army began to give the Italians a sound thrashing, and by December 1940 the Italians were being sent back home rather soundly. Dumbfounded by events in both Greece and Egypt, the British took the time to build up their strength and plan their counter-offensive.

Early 1941 was to be a tumultuous time for Italy. In just three short months Il Duce was to lose almost everything gained just a few months before. The offensive started just before Christmas 1940 as British forces rolled over the Italian positions along the Egyptian border and thrust deep into Cyrenaica. By February 1941 Britain was on the road to Tripoli, having captured quite a bit of materiel and over 300,000 prisoners for their trouble. The situation in East Africa was also tenuous.

Enraged by his erstwhile ally's misdeeds in Africa and the Balkans, Hitler decided to act or risk losing the region forever. In February 1941, the formative elements of Germany's expeditionary force, the Deutsches Afrikakorps, began landing in Tripoli.

The Desert Fox

Hitler charged his most resourceful and talented general with the task of reversing Axis misfortunes and turning them into victories: Erwin Rommel.

A decorated unit commander from the First World War, Rommel was a professional soldier from a family with very few military connections. Admired by his men and respected by the enemies he faced, he preferred to lead from the front and live like his men, in the trenches.

Wily, difficult and unconventional in military thinking, Rommel's star rose during the invasion of France and the Low Countries, when his Panzer division struck deep into the heart of France and took Cherbourg. Rommel was a skilled master of Blitzkrieg tactics and self-professed 'new style' general who understood the value of walkers and other new technology in warfare, and who was not afraid to apply the lessons of war.

Rommel was also a man of remarkable resourcefulness; he became a master of defensive warfare and a soldier able to produce stunning results against overwhelming odds with little resources.



• TURNING THE TIDE

Rommel wasted little time. Opening his offensive at El Agheila in March, the Afrikakorps struck deep and hard. The British, suffering from overextension of their supply lines and inadequate equipment, were flung back in leaps and bounds. By April, the lightning assault had surrounded Tobruk, a city sought-after by both sides because of its considerable port facilities. With Tobruk under siege and General O'Connor, commander of the British forces in North Africa, captured by German patrols, the fortunes of war now shifted towards the Nazis.

Unable to take Tobruk, Rommel was ordered to continue the offensive in May. The stunned and shaken British launched two equally forgettable offensives in an attempt to stem the Axis horde. The second offensive fought around Halayfa Pass succeeded only in flinging the British back into Egypt at considerable loss.

Once again, the Axis was at Egypt's border. This time, however, the next push could very well crush the British once and for all. Before Christmas, Nazi troops would surely be bathing in the cool, yellow waters of the Nile.

• THE GREEK EXCURSION AND THE INVASION OF CRETE

Meanwhile, events in Greece also turned against the British, who came to the aid of the Greek king in March 1941 with a sizable and well-equipped expeditionary force. Unwisely, Churchill had ordered the Greek intervention troops to come from the 8th army, over the vigorous objections of its commander. The British forces in North Africa were seriously weakened, a fact Churchill would come to bitterly regret.

Hitler ordered intervention in Greece, and in early April German forces, having invaded Yugoslavia, rolled into the country. The Greek and British defenders, in the wrong place at the wrong time, were quickly thrown into disarray and confused retreat. By late April Greece was under the Nazi jackboot, and shattered remnants of the British force retreated by sea to the island of Crete, having lost much equipment and men during the campaign.

Hitler would not allow the dazed British time to recover and immediately ordered an invasion of Crete to smash the last dregs of British influence in the region. On May 21, Operation Mercury was launched with a combined invasion from the air and sea. Mercury was notable in that General Karl Student's airdropped infantry and walker forces were used for the first time on a massive scale, to considerable effect. By the end of May Crete was in German hands, and British military influence in the Balkans was extinguished.



Strike from the Skies!

The aerial invasion of Crete was the largest drop of glider-borne light walkers up to 1941. Over forty walkers were glider-dropped along with the paratroop assault, with the greatest numbers landing at Maleme and Herakleion. During the initial landings, almost a quarter were damaged or destroyed through accidents (the worst being a glider, carrying two Valkuries and twenty support troops, that hit a rocky outcropping during landing and broke apart, killing all aboard). Over the course of the ten-day invasion, over half of the German walker force was lost, mostly through the assaults on the airport at Maleme and the attempt to break through the British rearguard protecting the retreating convoys at Sphakia.

In the aftermath, General Student recommended to the German High Command in his report that changes be made in the doctrine of the Fallschirmjager. No longer would they drop with most of their weapons in canisters; from now on each man would carry a full load. The Maori snipers of General Freyberg's New Zealanders had taught the "Hunters from the Sky" the folly of jumping with only a pistol and grenades on their person. In the words of General Student, "I cannot stress enough the effect of the Loki and Valkurie crews had in achieving our victory on Crete. Without their efforts in breaking up the British ambushes around our weapons canisters, our forces would have taken prohibitive casualties, so much so that our ability for further airborne operations might have been permanently impaired."

• TOBRUK RELIEVED

Back in North Africa, both sides settled into a brief period of uneasy peace. With his supply lines overextended and Tobruk still sitting uncaptured to his rear, Rommel needed time to rebuild his strength. The British, though closer to their sources of supply, had lost much in Greece and the battles raging in the Middle East taxed their resources and men further. Reorganized into the 8th Army, British forces set about to retake

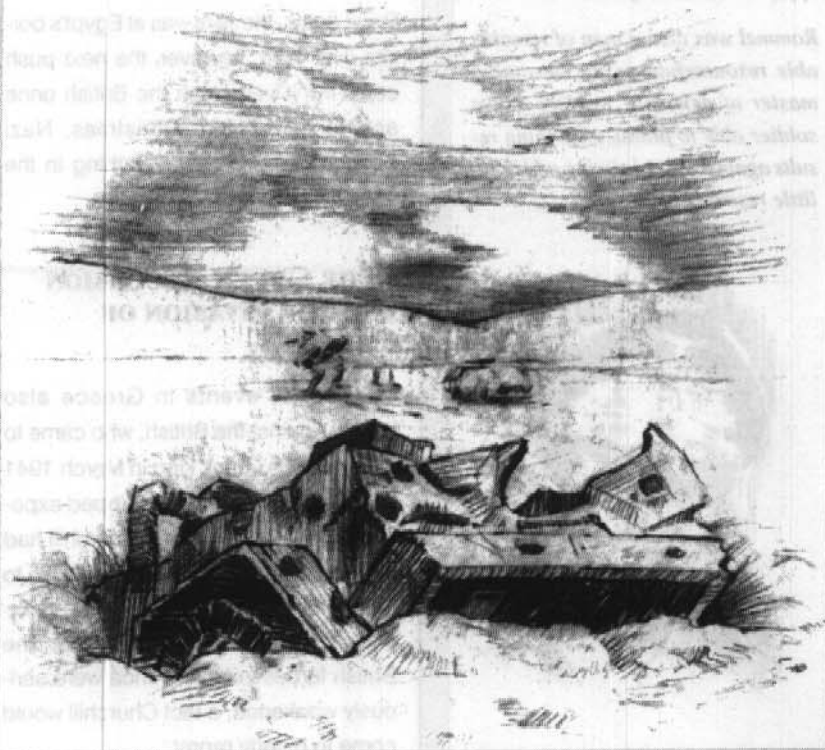
Cyrenaica, relieving beleaguered Tobruk in December 1941.

Surprised by the show of initiative of the British, Rommel was forced to fall back and by the end of December Tobruk was retaken and its ports again open to British supply ships. The battle for North Africa had momentarily turned again towards the British, but like the tireless shifting of the desert sand, the fortunes of war were to change many more times in the months ahead.

Supply and Attrition

An army fights on its stomach, and nothing could ring more true in the Desert War. The North African campaigns were sweeping and total in their gains and losses, but any advantage could only be carried as far as supply lines could travel. With hundreds of miles between ports, and several tons of supplies needed every day to keep the front moving and fighting, an advance would literally run out of gas at the moment of greatest success.

Both sides also made widespread use of each other's equipment, constantly sifting the battlefield for 'runners,' fuel and sometimes even ammunition and food. The desert war combatants were master recyclers and often found unconventional ways to keep equipment running and their forces in fighting shape.



**• THE MEDITERRANEAN WAR**

Perhaps the most critical element of the Desert War was the supply convoys that snaked through the treacherous waters of the Mediterranean Sea. Britain relied on fresh troops and supplies from its Commonwealth allies, and the entire Axis war effort depended on the supplies trickling in from Europe. Seizing control of the Mediterranean assured victory, and both sides fought savagely for claim to the sea.

Up to 1941, Britain held the upper hand. The island of Gibraltar assured British control of the entrance to the Mediterranean from the Atlantic, and the Suez Canal ensured relatively safe passage of convoys from the Indian Ocean. Axis convoys sailing and flying from Italy faced constant harassment, and shipping losses were heavy. British convoys didn't have it easy either: U-boats infested the waters around southern Italy and Malta, and attacks from the air became a constant threat as the huddling convoys sailed to and from North Africa.

• THE MIDDLE-EAST WAR

With the British cause in Greece now lost and Rommel rolling across North Africa, yet another threat reared its ugly head against the Allied cause. The Middle East became another front, as the Nazis schemed to squeeze the British out of Egypt from the north. Vichy-controlled Syria and Lebanon were always cautiously eyed by Britain, but in 1941, Germany, forcing the hand of the Vichy colonial authority, attained the rights to use French Middle East as a staging ground to help Iraq.

In early 1941, Iraq came under the heel of the pro-Axis regime of General Rashid-ali. Traditionally an indifferent ally of Britain, Iraq fell under the sway of anti-colonial sentiment and Rashid-ali, backed by Nazi agents, quickly seized power in the spring of 1941. Fearing British intervention, Baghdad formally pleaded for Axis help; they were more than willing to lend a hand.

Pan-Arabia and the Golden Square

The Colonial Powers were widely detested in the Middle East, and at various times colonial authorities were frequently putting the lid back on a constantly boiling pot of Arab discontent. The World War would create the opportunity the locals needed to oppose the colonial invaders and throw them out once and for all.

With the fall of France and the shift of her colonial holdings to the Axis camp, Nazi agents wasted no time twisting the Pan-Arab cause to their insidious ends. Many Arab groups, equally mistrustful of the Germans and Italians, none the less saw the Axis cause as a source of weapons and materiel to further their ends to break free of the shackles of the infidels. Most prolific of the Pan-Arabists were General Rashid-ali and his cabal of generals, collectively known as 'The Golden Square.' Many elements of the Freies Arabien Legion were to fight alongside both the Afrikakorps and the Orientkorps.

Fortress Malta

The most critical naval and air base the British had during the early war in Africa was the island of Malta. Strategically situated, it allowed the Royal Navy and Air Force to tirelessly harass the precious Axis supply convoys streaming from Italy. The island itself acted as a jumping point for the British convoys who steamed through the Straits of Gibraltar, braving Nazi U-boats and dive-bombers.

Early in the desert campaign, Malta came under constant Luftwaffe harassment; the wail of air-raid sirens became an accepted part of daily life. The ports often became blocked with partially sunken transport ships, and the airbase at Takali was the center of a brief but destructive air campaign.

Fighter pilots stationed at 'Fortress Malta' rarely had a quiet day and casualties were high, spurred upwards by both exhaustion and combat. Until the timely arrival of a mixed squadron of Hurricane and Tornado fighters, the sole RAF defense of the island was dependent on three obsolete Gloster Gladiator biplane fighters nicknamed Faith, Hope and Charity.





• THE NAZIS ARRIVE

By April 1941, Axis forces began landing at the port city of Beirut, and airfields across Syria buzzed with transport planes ferrying troops and supplies. Elements of the Orientkorps, a polyglot of German, Italian, Vichy and local Pan-Arabist units, began to take shape and grow in strength. Axis transports droned over the skies of Baghdad; the city's warehouses gorged with Nazi supplies and ammunition. British agents reported the alarming news back to Cairo and London that the situation appeared 'fluid.' Though desperately stretched to the limit, British commanders knew they had to strike or face another front along with the added threat of Axis control of the precious oil reserves in Iraq and Persia.

On the morning of July 10, 1941, Operation Exeter creaked into action as

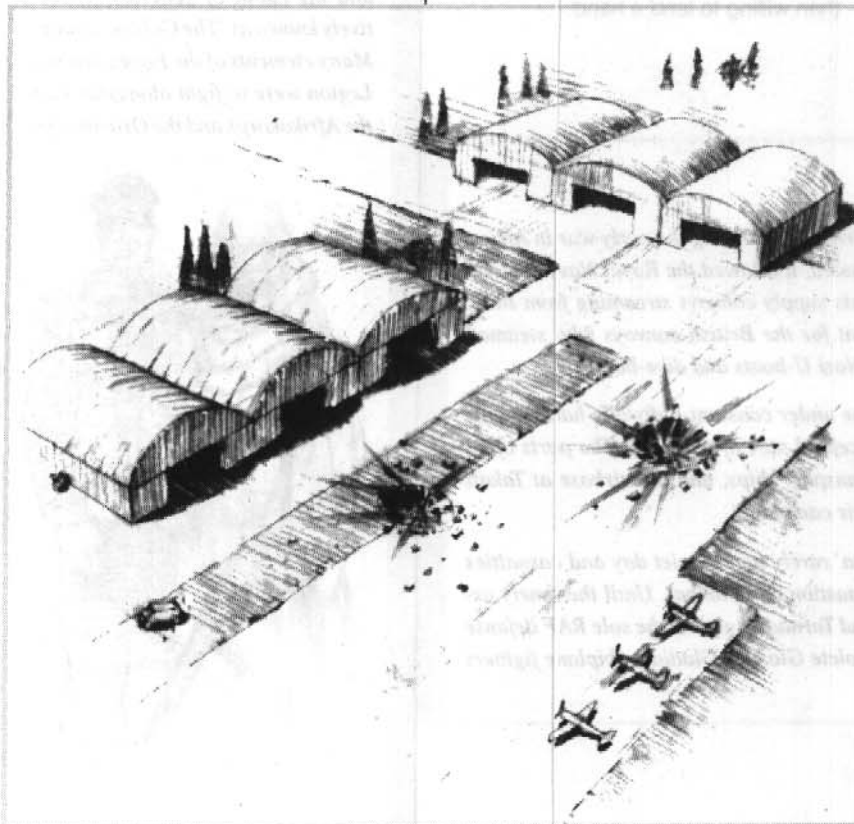
British and Free French forces spilled across the borders of Transjordan and Palestine, striking out towards Beirut and Damascus. Gains were swift until the fighting entered Beirut proper and the first formations of the Orientkorps entered the fray.

Over the next two months, a savage battle swept across Lebanon and Syria as the Orientkorps fought a running battle with Allied forces for control of the oil pipelines. Eventually Beirut was taken, but at considerable loss. Damascus was equally savage, but the fighting was considerably more one-sided as the Royal Air Force ruled the skies, harassing the defender below and sweeping the enemy from the air.

With Damascus invested and their corridor to the sea now cut, the Orientkorps fought another running retreat into Iraq, where airfields, reinforcements and

fresh supplies would allow the Nazis to maintain a presence in the Middle East. Despite the thorny problem at Habbaniaya, Iraq was ready to warmly welcome its Nazi liberators.

Ultimately, the linchpin to Axis success relied on the continued compliance of the new Iraqi regime. This was unbalanced when a British relief force thrust into Iraq and pushed straight to Habbaniaya, taking it in early September. With a two-pronged assault now rolling deep into Iraq, the erstwhile Rashid fled into hiding, and his regime collapsed three days later as the Nazis seized control of Baghdad in the final act of betrayal. Bitter fighting followed around and in the city, but the Axis forces, now weakened and low on serviceable equipment, were unable to hold out for long, and made one final retreat towards the Persian border, which still held to the Nazi cause.



The Heroes of Habbaniaya

Iraq had once been pro-British, and as part of an agreement Britain was allowed to maintain some small airbases and the right to move troops through Iraqi territory when needed. That all changed when the Golden Square seized power. Most British bases existed only as mere points on a map flat enough to land an airplane. But one base, Habbaniaya Airfield, was to make headlines back home. Throughout the battle to retake Iraq, the beleaguered defenders held off the numerically superior Iraqi (and later Axis) forces until relieved two months later in September 1941. The airfield was later used by Allied forces to ferry troops and supplies into war-torn Persia until the destroyed airfields in Baghdad were repaired.

Orientkorps

Born from a political dream of Axis global solidarity, the Orientkorps was Hitler's idea of a tool for creating a land link to the Pacific, upon which victorious Nazi and Japanese forces would meet up and continue their struggle to liberate the world and place it under benevolent fascist rule. Driving through Iran and Persia, they would create a bridge of Axis land between Europe, North Africa and Asia.

The Orientkorps could have succeeded in its mission, but fate was to take many swift and unexpected twists. The war against Russia on the Eastern Front was to ultimately drain away badly needed forces that were required for the Middle East War. With victory seemingly assured in North Africa, the Orientkorps was seen as a secondary concern, forcing it to rely on its erstwhile allies and local militias and equipment to bolster its ranks.

None the less, the Orientkorps was to fight with a considerable elan and resourcefulness that rivaled that of their brothers fighting in the desert. Despite this, however, they would never attain the notoriety of the units fighting in North Africa.



• RETREAT INTO PERSIA

Nazi agents, hoping to continue their success in Persia, had helped foment a minor uprising amongst the military in July 1941, forcing the Shah to accept an agreement authorizing Axis intervention if Persia was threatened by Britain. In reality, the uprising was indifferent to the Axis cause, and quickly collapsed when the war finally did enter Persia in early 1942.

The remnants of the Orientkorps fled eastward towards Persia. Skillful delaying actions and rearguards delayed the exhausted British pursuers, but the two-

week retreat had further depleted the Axis ranks to almost critical levels. The British, also weary from months of continuous fighting, stopped at the Persian border, their lines of supply severely strained and overextended. It was time to consolidate.

Once again, the Orientkorps had barely escaped destruction. But their situation was desperate and the position in Persia tenuous. With British lines of supply stretched and the Orientkorps exhausted and depleted, the Middle East War, like the North Africa campaign, ended 1941 in stalemate.



THE WAR IN THE EAST (JUNE-DECEMBER 1941)

The Russians enjoyed the spoils of September 1st, when Germany invaded Poland. Poland was split in half by Germany, the eastern portion allotted to Russia to "appease" her and to allay fears of an eastward-expanding Germany. Russia moved in to stay. This was a move to calm the Russians much as Germany had previously appeased Hungary. Earlier that year, Germany had turned the Czech Republic into a "Nazi Protectorate," and had encouraged Hungary to loot areas not under direct German control. Nazi Germany simply applied the same courtesy to their Russian "allies."

His taste for expansion whetted, Stalin invaded Finland in November 1939, and as a result the USSR was expelled from the League of Nations. Russia took a beating from the Finns in a brutal guerrilla war, a consequence of poor fighting spirit and an officer corps bled dry by Stalin's purges in the late 1930's. The Red army was victorious in the end, but at a horrific cost in men, materiel and morale. Hitler and the German General Staff observed the Russian military's lack of expertise with predatory interest.



In 1940, Finland signed a peace treaty with Russia, although clandestine resistance continued. From late 1940 to June of 1941, the USSR stood by their non-aggression treaty with Germany and slowly built up the materiel and logistic infrastructures of their military. It would prove to be too little too late. The storm was fast approaching, even though Moscow could not see it looming on the horizon. Stalin, never a man to admit his ignorance of technical matters, had announced to his Generals that the Army of the Soviet Union would not bother with the new walking war machines, and placed his faith in the new SMK multi-turreted tanks rolling off the assembly lines.

Stalin was convinced that Hitler was a man he could do business with. At dawn on June 22nd, Germany put Operation Barbarossa into effect, invading Russia. When the news reached Moscow, Stalin was appalled. He was so utterly surprised by events that he locked himself in his room for the first ten days of the invasion, refusing to see anyone. Finally, on the tenth day, a group of his inner circle, including Molotov and Beria (chief of the NKVD, the secret police), was able to force its way in to see him. Stalin was convinced they meant to assassinate him, and was astounded once more when they all begged him to resume leadership of the country in its time of crisis. Such was the power of Stalin's personality over his sycophants that they could not conceive of doing away with him, even in the face of his monumental blunder.

• THE GERMAN INVASION

Hitler had planned the actual conquest of the Soviet Union even before the outbreak of the war. The Nazis had been taking advantageous positions in the

east (Poland, the "protectorate" of Slovakia), and conquests in Norway had provided important staging points into the northern reaches of the USSR. The armies of Hungary and Romania were at Hitler's disposal, and his grip on the Balkans further strengthened when Yugoslavia and Greece were overrun in mid-1941.

The Soviet Union, naturally suspicious of her Nazi neighbors, had shored up her defenses to some degree. Russia had seized the eastern part of Poland in 1939, and between 1939 and 1940 had fortified her holdings in the Baltic States. The war in Finland allowed the USSR to extend her defensive positions farther to the north and west of Leningrad. She also had Bessarabia ceded to her by Romania (hence the latter country's enthusiasm for a Nazi pact).

Germany had many reasons to march on the USSR. Aside from Hitler's antagonism towards Bolshevism, there was the wheat of the Ukraine, the coal and iron mines in the Dnieper and Don river regions, and oil in the Caucasus and the Caspian regions — the very material Germany required to fuel its armies and complete its conquests. There was also, of course, Hitler's desire to find new 'living space' for his victorious people and a nation of slaves to serve his dreams.

NAZI STRATEGY AND OBJECTIVES

The German objectives in the invasion of Russia were Leningrad, Kiev and Moscow, all important hubs of Soviet communications, railroads, road transport and military potential. The initial weeks of the offensive were sweeping and decisive for the Germans; the endless expenses of the Russian steppes were conducive to the sweeping lightning warfare Germany had inflicted on

Western Europe. The occupation of Smolensk and the siege of Kiev cut the main north/south rail lines and deprived Russia of valuable industrial resources. This gave the German invaders the key to the Ukraine.

By the end of September 1941, Leningrad and Odessa were besieged, Kharkov isolated, and Kiev, Minsk, Smolensk, Tallinn and Gomel had fallen. Marshal Voroshilov had conserved much of Leningrad's defensive force, allowing the city to offer a prolonged resistance. Things got a lot worse.

Stalin had wanted to move his Siberian divisions westward to guard against German territorial ambitions, but Hitler and Tojo, unknown to him, had signed a secret agreement in the beginning of May. Germany promised to grant Japan territorial concessions in the far east of the USSR once the Nazi conquest was accomplished. In return, the Japanese agreed to put on the pressure along Manchuko's border with the USSR. The Imperial Army arranged a series of "incidents" that had Stalin, along with several of his Generals, convinced the Japanese were contemplating invasion. Memories of the Russian humiliation of the Russo-Japanese war at the beginning of the century haunted the Soviets. They delayed moving the Siberian troops west.

The Germans had seized air superiority early in the invasion by surprising much of the Soviet air force on the ground, just as it had in Poland in 1939 and in France in 1940. On October 3rd, Hitler told the German people that "...this enemy [USSR] is already broken and will never rise again." The German front at this point was actually over-extended (well over 600 miles into Soviet territory), but would go farther still in the days to come. By late November, anticipating the



worst, the Soviet government and administration was evacuated from Moscow to Kuibyshev. After many debates, Stalin himself remained in Moscow, bolstering the morale of the Red Army in a very real and tangible sense. And it needed bolstering badly.

Through October and November, Orel, Bryansk, Kalinin, Odessa, Kharkov, Mariupol and Kerch fell. Sevastopol, in the Crimean peninsula, was under a brutal siege. The Russian defenders refused to surrender, relying on the underground system of tunnels and bunkers to confound the Nazi war machine. The longer they held out the better, as they knew they were tying up German troops and resources. Every hour bought for Mother Russia was precious. Realizing this, Hitler ordered the "cockroaches," the bane of the Maginot line, into battle once again. This time, however, they carried canisters of mustard gas instead of explosives. Thousands of Russians died, coughing their lungs into bloody froth in the dark.

• THE BATTLE FOR MOSCOW (NOV.-DEC. 1941)

On the second day of November, German army units began penetrating the westernmost suburbs of Moscow. Stalin had ordered huge defensive works constructed about the city, including miles of anti-tank ditches. Unfortunately, these did little to deter the Panzerkämpfers.

Once inside the outer ring of the city's defenses, the fighting became a horrific house-to-house affair with no quarter asked or given. The Red Army found itself bitterly regretting Stalin's lack of faith in the new walker technology, as the Panzerkämpfer close infantry support was a definite advantage for the Germans. As November slid into December, the world waited and watched, hold-

ing its breath. The fate of Moscow was hanging by a thread. Then, on December 5th, Mother Russia came to Stalin's rescue. It began to snow. The onset of winter began with a terrible blizzard, the worst snows in Europe for a hundred years. Combatants in the city fighting were literally blundering into each other because of the poor visibility.

WINTER WOES

The German High Command realized by the winter of 1941 that their lack of winter equipment, along with the massive build-up of human resources and preparation on the part of the Soviet Union, were going to be a problem. The Red Army was caught off-guard, to be sure. Much of the Red Army was inexperienced, and men ran and equipment was abandoned at the mere rumor of a continued German advance. But this soon stopped under better leadership, more experience and draconian discipline: Beria's NKVD field police shot deserters out of hand. Red Army troopers soon became more afraid of them than the Germans!

A factor that also slowed the German advance was the destruction of materials and property before the ever-advancing Wehrmacht, a "scorched-earth" policy so ordered by Stalin. Also, a large partisan movement arose very soon under German occupation. Partisans were slow in organization in the Ukraine at first; many Ukrainians had chafed under Soviet rule and welcomed the German invasion. This sentiment soon changed once the horrors of the SS were unleashed in ethnic cleansing.

In the factories of Mother Russia, men, women and children toiled in defense plants and factories, and women joined the ranks of the Red Army in all areas of infantry (more commonly as snipers and

The Russian Winter

The snow took everyone by surprise in December 1941. It was the worst winter in a century, and it set in many weeks earlier than expected. The German army was poorly equipped for winter warfare, and its men suffered greatly as a consequence.

Many soldiers simply froze to death — Hitler had been so sure of a quick victory on the Eastern Front that no winter clothing had been issued at the start of the campaign.

Soviet tanks and vehicles, wide-tracked, acclimated and designed to fight in the diverse Russian climate, ran circles around German Panzers stuck in the mud or broken down in the cold. The supplies, loaded onto wheeled transports, became bogged down and logistical nightmares arose. Guns refused to fire, because the oil had frozen solid. The Germans were reduced to building fires under their vehicles to warm them enough to start them.





walker crew), artillery and the air force (three regiments were all female, the 46th Guards Bomber Regiment, the 125th Guards Bomber Regiment, and the 586th Fighter Regiment).

There were many small offensives and counter-offensives in the winter of 1941, but the greatest battle of this period grew out of the Red Army's attempt to recapture Kharkov. This failed after a massive German counteroffensive. By winter's end Russia had taken the offensive after bitter months of defensive actions. The Russian people rallied to war-time efforts, and Russian salvage proved to be an amazing advantage, as materials were reclaimed from a battlefield and sent for refurbishing even before the dead were buried!

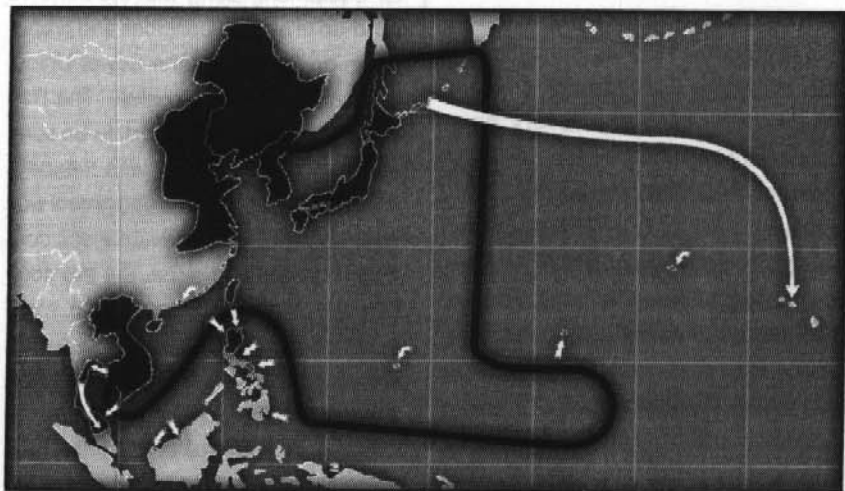
The United States and Great Britain finally stepped forward to aid Soviet Russia in their fight. In June and July of 1941, both nations signed Lend-Lease Agreements with Stalin. By October, they would be sending tanks, walkers, aircraft, ammunition and supplies via a treacherous northern sea-route to the city of Murmansk. Although downplayed in later years, this aid was vital to the early Russian war effort.

Of special note was the delivery of British technical data and American early walker chassis to the Soviets, giving Stalin's researchers the head start they needed to begin their own walker program. The Great Leader had had another change of heart, prompted no doubt by the effectiveness of the German walkers. Like most of Russia's war industry, the new walker development facilities were located to the east of the Ural Mountains, far out of range of the attentions of the Luftwaffe.

THE PACIFIC WAR (DECEMBER 7-31, 1941)

In many ways, it could be argued that the war had already been raging in the Pacific for ten years even before the Japanese attacked Pearl Harbor in 1941. Many of the events that transpired following the Great War ultimately set the stage for the war to come in the Pacific.

Japan emerged in the 1920s as a regional powerhouse, both industrially and militarily. Ambitious and meddling, the Imperial Army constantly saw fit to dabble in the affairs of its Pacific neighbors, especially China, at that time wracked with civil unrest and chaos. In many cases the Imperial Army's warlords dictated Imperial policy without approval from Tokyo; before long the Army became the *de facto* government of Japan.



• JAPANESE IMPERIALISM

As nationalist views hardened in the 30's, Japan seized the Chinese province of Manchuria amid the chaos of civil war. Renaming it Manchukuo and installing Emperor Pu-yi, successor of the Manchu throne as puppet ruler, Japan now had a land base into central Asia. Over the next two years Japan would extract further concessions from China, using the civil war to seize more territory from the local bandit warlords.

In 1937, fearing that China was about to emerge united from years of chaos and resist Japanese expansion, the Imperial Army embarked on a full-scale invasion of northern and central China.

Within two years, the Rising Sun was fluttering from the Sea of Japan all the way to Peking and northward to the borders of Mongolia and Soviet Russia.

With the fall of France in 1940, Japan began to force the hand of French colonial authorities in Indo-China. Complacent and unable to realistically resist, the Vichy French allowed widespread use of bases in Madagascar and Indo-China. Having become increasingly disturbed with Japanese actions the past few years, the United States had had enough and placed heavy sanctions on them. Fearing economic starvation and angered by American impudence, the stage was now set for Japan to act.



• THE MANCHUKUO FRONT

As Japan was to enter into full-scale war against the Allies, it also began a series of cross-border skirmishes with the Soviet Union. Having had border entanglements with the Japanese since the late 30's, Stalin had several of his hardened Siberian divisions peppered along the border to protect his Siberian flanks from his pro-Axis neighbor. In late October 1941, Stalin's nightmare was compounded further as the Japanese became increasingly restless and their actions less predictable. There was much border activity but little sense could be made of its purpose.

Seizing control of the Soviet-controlled railway that snaked through northern Manchukuo, the Japanese moved forces right into the border town of Manchouli and forces amassed at Changkufen, the scene of an earlier incident in 1938. Little could be gauged of Japanese intent or even troop movements, but Stalin's agents in Tokyo informed him of no clear intent of the Japanese, other than they seemed mostly pre-occupied with forthcoming events in the Pacific.

With the war going horribly in the West, Stalin began to bleed away forces from the Manchukuo Front. By mid-November, Soviet garrisons were at their thinnest along the northern borders and forces in Mongolia were at a critical level. Sensing this, the Japanese gambled and began their concerted campaign to take Vladivostok and several small towns across the Amur River.

Stung by the initial ferocity and surprise of the Japanese attack, Soviet forces reeled, though the garrisons around Vladivostok stood their ground and kept the Japanese from seizing the much-prized port city. The Japanese further compounded the Soviet situation after

bombing the local rail links a week into the invasion. Effectively isolated and ordered to stop the Japanese at all cost, local Soviet commanders began to reorganize and within a couple weeks Soviet resistance stiffened. Once again, the Soviet generals had cause to bitterly regret Stalin's rejection of military walkers for the Red Army. The new T-34 and KV-1 tanks totally outclassed their Japanese opposite numbers, but the Soviet commanders had nothing in their arsenal to oppose the Japanese walkers, who decimated the Russian armor with their Banzai Teppoyari charges.

By the end of December 1941, the struggle for Vladivostok was gripped in a stalemate; the cold weather and lack of sufficient strength on the part of the Japanese precluded any chance of an immediate push into the city. Japanese gains in Mongolia and north of the Amur River were considerable, but weather and stretched supply lines began to rob the advance of steam. The coming of spring campaign season would surely determine the ultimate victor.

• 'DAY OF INFAMY'

"I can wreak havoc for a year, but after that I can offer no promises"

— Admiral Isakoru Yamamoto

In the pre-dawn gloom of December 7, 1941, an amassed force of fighters, rocket planes and torpedo bombers droned above the Japanese carrier fleet of Admiral Nagumo. Laden with bombs and torpedoes, two waves of planes set off for Pearl Harbor, safe-haven for the U.S. Pacific Fleet. The plan was simple: deal a killing blow to the Fleet nestled in the anchorage of Pearl Harbor. With the United States' carriers and battleships destroyed, Japanese naval domination of the Pacific would be assured!

At 7:40 AM, as the sleepy naval base slowly buzzed to life, the Japanese struck from the skies. Caught totally unawares, the base was thrown into total disarray as bombs rained and explosions thundered across the fields. The attack, lasting thirty long minutes, struck hard and fast at the ships in the anchorage and the outlying airbases. As soon as they had begun the Japanese slipped away, leaving behind a terrible wake of destruction and carnage. The second wave, arriving almost an hour later, had a harder time but still had considerable success. Poor visibility and heavier anti-aircraft fire gave the second wave a harder go at it. None the less, more ships were damaged, further crippling the Pacific Fleet.

Having been given orders to attack secondary targets if the prized warships were unreachable, the Japanese planes buzzed about the airfields and supply depots scattered across the island. Almost unwittingly, Japanese dive-bombers attacked the precious fuel oil depots scattered close to the harbor. Lightly defended and extremely vulnerable, they proved easy and spectacular targets to Japanese bombers. Within minutes the depots were awash in flames, their explosions rumbling across the island. The fuel burned for days, covering the island in an inky twilight of black smoke.

As the last Japanese planes droned away and Pearl Harbor went up in flames, the ultimate prize eluded the Japanese. The carriers, hundreds of miles away, had escaped the carnage, effectively keeping the United States in the war. None the less, the attack resulted in the destruction of or severe damage to eighteen ships. And with naval fuel oil supplies severely depleted, the next few months were to be trying times for the U.S. Navy.



Shocked and infuriated by such an unwarranted sneak attack, President Roosevelt declared war on the Axis the very next day. The attack, whilst successful militarily, had not cowed the American people as the Japanese had expected. Instead, the infuriated Americans would accept nothing less than total victory. Its (theoretical) neutrality dissolved, the United States entered the war firmly on the side of the Free World.

• THE PACIFIC BLITZKRIEG

With the gloves off, the Japanese High Command wasted no time in feasting on their erstwhile neighbors. As Pearl Harbor still burned, invading armies struck hard and fast across the Pacific, investing Guam and Malaya. Within days, Allied forces were reeling from the Japanese invaders streaming into Luzon. Fighting was fierce and unremitting in the Philippines as the cornered American garrison fought desperately. By the end of December they were still alive and kicking, but their destruction was assured. Siam, Malaya and British Borneo also fell to the Japanese following swift air attacks and amphibious landings. In all cases, the unaware and under-strength defenders usually gave up with little or no struggle. The Pacific blitzkrieg was both stunning and unexpected.

The Japanese were soon conducting their war across a 6000-mile front, sweeping the Allies back from land, air and sea. By the end of December, much of south-east Asia was under Japanese control, and the last British presence in the area, Hong Kong, fell to the Japanese on December 25th after a futile defense of the colony.

• STORM IN THE EAST

By the end of 1941, the Japanese advance seemed irresistible. With their forces reeling and their navies in disarray, the Allies seemed unable to stem or even slow the Japanese advance across the Pacific. Victory, for the moment, was a Japanese monopoly. But the shock of impact was beginning to wear off, and the months ahead would ultimately decide the Pacific War.

In Manchukuo, the status there was more even-handed. The initial shock of invasion sent Soviet forces into a tail-spin, but inclement weather and harsh discipline on the part of the Soviet regional commanders slowed the Japa-

nese advance. Though not as epic as the Nazi advance towards Moscow, the Manchukuo Front was proving to be a serious drain of terribly needed troops elsewhere.

The Japanese attack on Pearl Harbor slapped the United States into the War, turning the conflict into a truly global one. With the Americans now fighting alongside the remnants of the Free World, there was at last a glimmer of hope. With the U.S. forces inexperienced and understrength, and her wartime industry unrealized, however, some wondered if it was still too late to resist Axis world domination.

Vivian, Caroline and Jaqueline

The Battle of Hong Kong saw what is widely regarded the first-ever known use of captured walkers by the enemy during the War. Having lost the few machines the Canadians had at the Gin Drinkers Line, retreating forces were able to capture three intact Japanese walkers while their crews were resting. The three machines accompanied the haggard survivors across Victoria Harbor to Hong Kong Island proper and were pressed into service with the survivors at the naval base in Causeway Bay and defenses at Sanatorium Gap. The three machines became ersatz mascots to the defenders, whose crews named them Vivian, Caroline and Jaqueline, after family and loved ones.

The Japanese were mortified by this desecration, seeing the warrior spirit of their oshimoi mocked and used by their inferior enemies against their brethren. Over the next few days the machines were used to varied effect, though they could not stem the advances of the Japanese who swarmed across from Kowloon. Both Caroline and Vivian were destroyed at the Battle of Sanitorium Gap, and Jaqueline went down fighting in Wanchai.



WHAT THE FUTURE HOLDS

"The clouds of war had gathered and the storm had broken on an unhappy world. But what hope was there for Allied victory in the dark end of 1941? It was a black time indeed: Western Europe prostrate under the heel of the Nazi jackboot, the Russian steppes aflame, the deserts of North Africa churning under the treads and wheels of snarling war machines. The black dragon of Imperial Japan had uncoiled itself from the Home Islands, and was rending the Far East.

"So what cause did the Allies have for celebration in 1941?

"Several, if the facts are examined. Firstly, thanks to the Japanese attack on Pearl Harbor and Hitler's megalomania, the Americans had been drawn into the War at last. The slumbering giant of American industry would begin to shake the lethargy from its limbs.

"Secondly, Hitler's attack on the Soviets was a massive blunder. The Wehrmacht would be drawn into the endless steppes of the east, spreading ever thinner, like oil on water.

"And thirdly, and perhaps more incredible still, Tojo's Militarists had plunged Japan into a war on *three* fronts in Asia. Against the Chinese, in South East Asia, and in the North across the Manchuko border against the Soviets. All this while simultaneously prosecuting a naval war against the United States. Truly the interservice rivalry between the Japanese Army and Navy and their attempts to outdo each other boggles the mind..."

— Excerpt from Prof. Donald G. Cameron's lecture series, *The Second World War as an Impetus of Change*, Olympica University, Mars, January 2036

Walker Jungle Warfare

By design, early-war walkers were usually quite ungainly and crude machines, with balance and speed a constant problem. These shortcomings were further compounded by the dense, swampy and humid jungles of the Pacific. None the less, the value of walkers in the Pacific was not lost to both sides and a variety of solutions and unique walker designs were developed throughout the War.

During the battle for the Philippines in 1941, American and Japanese walkers faced-off for the first time, and the better-armed American machines had the upper hand in a straight-up firefight. Some American walkers were also equipped with fearsome flame-throwers, which the Japanese learned to quickly target and destroy at whatever cost.

In the Philippine jungles, however, the Japanese machines had the distinctive edge. Their machines had the complicated Ancillary Propulsion System, but also had a wide walker suspension modified and adapted to cut through the entangling undergrowth and not sink into the swampy earth. Like the fighting going on in various climates throughout the world, the Pacific War was to eventually see its own unique variety of walkers and other advanced war machines.

In the Pacific, things are grim indeed; the Japanese are rampaging across South East Asia. Thailand, Burma and Malaya have all begun to feel the weight of the Imperial war machine. The fall of the Philippines cannot be far off. What will be the Japanese Navy's next move? South to New Guinea and Australia? Or westwards to Hawaii?

In North Africa and the Middle East, the Nazis and the British Empire are locked in a death struggle to control the Suez Canal and the oil fields of Iraq and Iran. Will the desert sun rise on Allied or Axis triumphs in the coming year? Rommel is the devil haunting British commanders. Can Churchill find a general to match Hitler's chosen champion?

In the North, the Russian nightmare grinds on, uncaring as to who gets caught up in the gears. The streets of Moscow are blanketed in snow and soaked in blood. Will Stalin's Red Army hold out? Will the Russian determination to hold Moscow at all costs allow the Nazis to exploit Russian weakness on other fronts? And will the Japanese, seeing how the Soviets are reeling under the blows of the Nazi war machine, press home their attack on Vladivostok?

Strange and terrible advances in the science of war are in the offing. The world has already seen the advent of the walker and the jet-powered plane. What next? Allied and Axis scientists work long hours into each night laboring to create the "super weapon" that will win the war. The calculator technology that birthed the walkers will drive science on in a headlong rush towards the future. In the quest for increased combat effectiveness, innovative technology will light the way. But into "broad sunlit uplands" or "a new Dark Age"?

Only time will tell...



THE TECHNOLOGY OF THE GLOBAL WAR

Warfare is the mother of invention. Advances in technology forever changed the manner in which wars were fought. Even as far back as the American Civil War, improvements in the individual soldier's firepower made tactics of the Napoleonic era utter folly. By the time of the Great War (1914-1918), outdated rules of engagement crashed head-on with the impersonal, mechanized death delivered by the machine gun, poison gas, aerial bombardment and massed artillery. The Great War also saw the introduction of the tank, first fielded at the Battle of Cambrai in 1917, which broke the stalemate on the Western Front. The skies became a limitless battlefield, as aircraft, invented only ten years before, became another means of destroying one's enemies. Industry's importance rose as methods of mass production grew in leaps and bounds; out-producing an opponent and overwhelming them with sheer numbers was now a viable option.

The War to End All Wars concluded on November 11, 1918. The world was weary of war, and recoiled in horror at the loss of a generation of young lives. And yet, even though an era of renewed peace and hope followed, it was only the calm before the storm. The clouds of war gathered, though unnoticed at first. Soon the whole world stood at the brink of another World War "made only more sinister by the light of perverted science," as Sir Winston Churchill so aptly put it in his speech to the British House of Commons in 1940.

— Excerpt from Professor Donald G. Cameron's *The Technology of Warfare in WWII*, Olympica Press, Mars, 2028



• WEAPON TECHNOLOGY

Vehicles designed for war, especially the newer tank and airplane, with their increased mobility, heavier ordinance and increased battlefield endurance, became machines of destructive might in the latter days of the first World War. The roles these vehicles took quickly changed from attack support to rapid assault and front-line fighters in their own right. The late-30's introduction of the walker vehicle, whose computer, height and articulated frame combined to make it into a superb firing platform (at least compared to the armored vehicles of the time) further changed the battlefield.

New and refined manufacturing techniques gave weapons a higher rate of fire, reduced cost for ammunition and increased range. By the late 1930s, projectile weapons, in comparison to those used even just twenty-five years before, had reached an impressive level of performance. Machine guns could kill at a mile or more and shaped charges could cut through armored walls many feet thick. Gun calibers were increasing every year, the cannon's destructive power growing by leaps and bounds. New types of warheads, including the first of the tungsten core "long rod" penetrators, would make their appearance on the battlefield by the middle of the conflict. All these weapons were carried by tanks and armored walkers as standard weapons.

Rockets and missiles had started out being more dangerous to the user than the enemy. By the summer of 1942, rockets were becoming an increasingly common sight (and sound!) on the battlefield in artillery batteries and some ground attack aircraft. By the end of 1943, missiles with primitive guidance systems were in final testing, carrying

such contrivances ranging from wire or basic television systems to acoustic microphones that detected airborne targets by engine pitch. Probably the most ominous experiments were dedicated to the creation of inertial gyroscopes which could conceivably allow a weapon to target distant cities or other strategic assets up to hundreds of miles away.

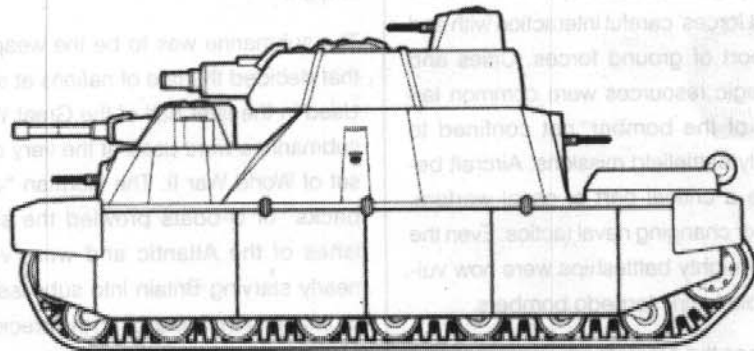
Experiments were also being made with directed energy weaponry, at first mostly by the Russians. Though the French Maginot line had fallen to the German army, its Tesla "death ray" guns had performed admirably, if somewhat erratically, prompting a wave of imitators. By the early 40's, a few rare Russian tanks were sporting scaled-down versions of the Tesla projectors, while British troops were fielding the first of their "Canal Light" primitive laser gun carriers.

Others, even more esoteric weapons would also appear from time to time, most of them prototypes or limited production devices that would often be as dangerous to the user as to the target!

• DEFENSIVE TECHNOLOGY

For tanks and other armored vehicles, armor started out being simply bolted or riveted in place. Soon, improvements in fabrication technology allowed turrets and even hulls to be cast in one piece, with the benefit of increased strength and superior protection over a like piece that was bolted or riveted. As the war progressed, instead of casting the armor, some field vehicles had their armor welded together. This was cheaper as far as materials and casting went, but it required the hiring of much more skilled labor to do the welding right.

It was eventually proven that the more sloped the armor was, the less likelihood there was of a round penetrating the



Supertank!

In the 1920's and 30's, military planners envisaged land warfare to be fought akin to naval warfare. Huge, multi-gunned battleships, swift cruisers and tiny torpedo boats all could have their land-based counterparts — or so the generals imagined. Perhaps the notion of gigantic multi-gunned tanks captured their limited imaginations the most, and before the war most world powers had at least experimented with 'land battleships.'

In the early years of the War, the British and French 'supertanks' in France and North Africa were to suffer greatly against the speed and fury of the blitzkrieg. Slow, vulnerable and underpowered, these land giants were quickly disabled or bypassed. The Soviets, unfortunately for them, also invested considerably in supertanks — the immense SMK 100 and T-28 were the mainstay of the Soviet mechanized forces in the opening volleys of Operation Barbarossa. By Christmas 1941, not a single of the original Soviet supertanks was left operational.

armor. Probably the first and most famous tank to successfully use sloping armor was the Soviet T-34, though other countries would soon adopt it as well.

Spaced armor was also vastly more effective against explosive munitions, such as shaped charges, as it deflected and diffused the energy of a shaped-charge shell before it contacted the hull of the tank itself. This was usually done by adding armor skirts or plates on the sides and front, and sometimes around the turret itself. The Germans were the first to use armored skirts and spaced armor plates, but soon Allied vehicles were following suit as both sides' tank-killing power increased.

• AERIAL TECHNOLOGY

Though mankind had only been flying for a few short years, advances made in that time were considerable. The 20's and 30's had brought on a huge increase in public interest, leading to a number of competitions and rallies that gave constructors endless reasons to perfect their creations.

Metal-skinned monoplanes, aerodynamic and powered by powerful inline or turbine engines, rapidly surpassed older generation biplanes of canvas and metal. Multi-engined bombers, sleek interceptors and ground-attack planes divided aircraft into distinct types and combat roles.



Aircraft now became a crucial part of the land war. The success of Germany's Blitzkrieg tactics was dependent on their aerial forces' careful interaction with and support of ground forces. Cities and strategic resources were common targets of the bomber, not confined to strictly battlefield missions. Aircraft became a critical part of naval warfare, forever changing naval tactics. Even the once-mighty battleships were now vulnerable to tiny torpedo bombers.

Perhaps the greatest advancement was the introduction of rocket- and jet-powered aircraft. Even before the war, Britain and Germany entered the jet age, but only Britain was to make the first steps of actually fielding jets, basing a squadron of primitive jet interceptors outside Duckworth during the closing weeks of the Battle of Britain. These dozen Gloster Pioneers were to herald the beginning of a new age in aerial combat. Soon the skies of the world would witness aircraft which had only recently been seen only on the covers of pulp science fiction magazines. Horton and Northrop flying wings and Messerschmidt rocket fighters would soon be soaring across the war-torn skies, even to the fringes of space itself! Allied and Axis scientists would, by their efforts to create faster and longer ranged aircraft, take the first steps in birthing the Space Age.

• NAVAL TECHNOLOGY

The greatest changes were in the realm of naval warfare. Twenty-five years before, the mighty battleship ruled the high seas. Now the carrier ruled, and the battleship was relegated to carrier protection or shore bombardment. The mighty battlewagons were vulnerable to air attack, and all ships carried batteries of anti-aircraft guns. Though ship fire-power had been increased and accu-

racy improved, only a few spectacular ship-to-ship battles took place, mostly at night.

The submarine was to be the weapon that decided the fate of nations at sea. Used in the later half of the Great War, submarines were used at the very outset of World War II. The German "wolf packs" of U-boats prowled the seelanes of the Atlantic and were very nearly starving Britain into submission by exacting a terrible toll on the precious supply convoys from the U.S. The technology and tactics to combat the U-boat menace began to be tested. ASDIC, or Sonar, became the best way to combat the threat by allowing convoy escorts to detect submerged attackers. The U-boats were not safe from air attack either — long-range flying boats patrolled the convoy routes and dropped depth charges on unwary subs.

• THE BIRTH OF ELECTRONIC WARFARE

Though guided weapons, electronic detection and radio jamming may be considered developments of modern warfare, all these weapons had their baptism during the Second World War. Even before the war, Britain, the U.S. and Germany had working radar installations. It was Britain, however, that was to first prove the value of radar, as the Home Defense Radar Network was able to detect the approach of Luftwaffe aircraft and successfully thwart the numerically superior German air force.

Radar was to also play a critical part in naval warfare. As far back as 1937, the German pocket battleship *Graf Spee* was equipped with radar for detection and fire control. American vessels were mostly equipped with radar, which, unknown to them at the time, was superior to that of the Japanese.

Perhaps the greatest use of electronic detection was in the air war. By the end of 1941, both Germany and the Allies had radar capable of detecting aircraft as well as computing their altitude to varying degrees of accuracy. By the end of 1941, the Allies were testing aircraft equipped with a short range radar and emitters capable of detecting aircraft within 1000 meters who were not equipped with a IFF (Identification Friend/Foe) beacon, or warn crews when their planes were 'strobed' by radar from enemy night fighters.

• ARMORED WALKERS

The man widely credited as the 'father' of walking machine theory was Professor Freiderich Goble, a gifted but frustratingly eccentric German inventor. In 1913, he presented a large number of military inventions, including his Panzerlandkreuzer, to the German High Command. Impressed with his working models, High Command demanded more, but Goble never delivered, and promptly vanished into obscurity for several years.

It wasn't until the early 1920's that J. Walter Christie, an American inventor of unique vehicle propulsion and motive systems, formulated the concept of a fast-moving mechanical walker. Unlike Goble, who fancied a walking land battleship, Christie envisaged a much smaller walker, both fast and maneuverable. By 1923, Christie had completed his first prototype, the W1923, which he extensively tested and displayed to curious friends and honored guests. Some found Christie's waddling contraptions amusing, but some also saw their potential, if the technology could be further refined.

Movers and Shakers

Christie was a religious man when it came to high-mobility warfare, a facet totally lost to traditional military thinking of the time. He was not alone...



Basil Liddell Hart, the British military theorist and father of modern walker warfare, visited Christie in 1923, and was impressed with the man and his ideas for a walking war machine. Hart's paper, "Mechanical Walkers — An Essay on Fluid Warfare," was widely read but mostly dismissed. None the less, Hart's beliefs and writings were to attract others, but not in the free world.

General Heinz Guderian, the creator of Germany's combined Panzer and Kämpfer forces, was an early convert to the idea of walking war machines. A reader and believer of Hart's writings, Guderian was impressed to learn of Germany's walker experiments, and became its benefactor during the years before the war. Guderian's book "Achtung! Kämpfer!," though ignored by the rest of the world, set the standard for the way Germany was to wage the next war.



General John Frederick Fuller, creator of Britain's armored tank corps, was also a convert to walker warfare. Following Christie's ideas, Fuller began a fledgling walker program in Britain in 1925. Saurian, Britain's first true walker, was not successful, but did use a radial engine and a gyroscope for balance, something the Germans were to copy for their own pre-war designs. Largely ostracized for his 'tin toy adventures,' Fuller was to be ultimately vindicated when war broke out.

Freiderich Goble was to make a comeback of sorts just before the war. Goble's own company was to give Traumshoteneun some stiff competition early in the war with its own competitive walker designs for the Wehrmacht. Ultimately, Goble was to see his dream of a walking land battleship become reality with his Jotun-class walkers and Spinne-class Dynamic Suspension Vehicles used by Germany in the war, as well as developer of submarine diesel engines used in the late war Ungeheuer ultra-heavy tank.



In 1924 Christie decided to approach the review board of the U.S. Army Ordnance Department, and submitted his patent request for his Mechanical Walker Suspension. Work began on W1924, a second-generation walker. Over the next three years, several improvements (and costly setbacks) resulted in the W1926, the final prototype suitable for review. On March 14, 1927, Christie's machine was shown to Ordnance Department officials at Fort Meade, Maryland. The cost-conscious officials were less than enthusiastic, but Christie remained optimistic, at least until the Ordnance Department rejected his machine outright a month later. Three years and thousands of dollars were for nothing. Christie was forced to near-bankruptcy.

DEVELOPMENTS IN GERMANY

Christie probably would have slid into obscurity if it were not for a fortuitous visit by representatives of the Weimar Republic in late 1927. At the time, Germany was germinating the seeds for its next war, and approached Christie under the guise of peaceful uses of his walking machines. The Grossarbeiter ('large worker') program, as explained by the Germans, was a means to get post-war Germany back on her feet. Heavy industry, forestry and mining were just some of the projected uses of the Grossarbeiter, a machine intended to increase the strength and productivity of Germany's laborers. Impressed with what they saw, the Germans paid handsomely for the prototypes and a partial license. The W1924 and W1926 were crated and shipped to Spain, and that was the last Christie saw of his machines. What he didn't realize was that the Germans had purchased his prototypes with the express intention of turning them into weapons.



The Treaty of Versailles forbade the German Reichwehr from developing any armored vehicles, cars and tanks. It didn't, however, say anything about *walking* machines.

It wasn't until 1930 that work began on a German walker program. Under the leadership of Doctor Erich Langhauser, a team of scientists and engineers began to reverse-engineer Christie's prototypes and improve on them. In 1934, the Grossarbeiter 114 took its first shaky steps. No state money was forwarded, however, so Langhauser continued development with his own money and loans by friends and family.

By 1936, the Grossarbeiter 127, probably the most advanced walker at that time, was shown to then-Colonel Heinz Guderian. Langhauser needed to convince the military to pick up the funding as his own money was now exhausted, and knew he would never gain military contracts without sanction from someone influential. To convince Guderian, Langhauser overstated the speed and the ability to quickly swap out weapons. He also talked about the capabilities of the next two models (he was, after the war, to confess that he was making wild guesses to keep the man interested). Langhauser had also read the works of Guderian, and stressed the Grossarbeiter's capabilities as a high-speed armored soldier capable of keeping up with his beloved Panzer formations. After a series of hard-sell discussions and demonstrations, Guderian was a convert.

By early 1938, the redesignated Panzerkämpfer ('armored fighter') project was a high-priority war program. For maximum safety and secrecy, the whole was encompassed under one company, Traumshoteneun Panzerfabrik, headed by Langhauser himself.

Germany's saber-rattling in the late 30s and its unabashed use of armored walkers in its 'border incidents' acted as a wake-up call to the rest of the world. Both Britain and the United States were to begin extensive catch-up programs (the FBI suddenly became *very* interested in Christie's financial dealings in the late 20's), while the Soviets were to largely ignore walkers, and Japan started its own *oshimoi* program with help from Germany.

ANATOMY OF THE ARMORED WALKER

Before and during the first two years of the war, walker development was fairly linear and generally dictated by German developments. British and American walker development was an offshoot of German innovations, though the Allies preferred to follow Christie's "Mechanical Walker Suspension" theories rather than evolve their own.

As the war progressed, however, even the respective Allied theories and designs on walker warfare were to diverge and change. The British preferred sturdy four-legged designs, but still widely used Lend-Lease American walkers. Germany was to also field four-legged designs, but on a much less massive scale. They did, however, have several of the more complex eight-legged designs, mostly for scouting tasks across extremely arduous terrain. The Japanese used mostly two-legged designs but did experiment a little with multi-legged ones.

By war's end, walker development had evolved to such a point that the new machines were in many ways unrecognizable from their shaky, waddling brethren fielded at the beginning of the war. They would take a bewildering variety of forms and functions.

COCKPIT

All the early-war walkers were two-man machines. One man was the pilot and maintainer of the on-board computer; the other was the commander, ammo-loader and fire controller all in one. The small size of most walker designs prevented increases in crew size, forcing designers to innovate new methods of sharing the burden of controlling and fighting the vehicle.

Piloting and fighting in a walker required considerable teamwork, and was often a noisy, hot and dangerous assignment. Though one crewman could control the machine alone, the combat efficiency of the machine degraded considerably. In some designs, the loss of one of the two crewmen spelt disaster, as each man was located in a separate part of the machine. This was a common problem with Soviet, Japanese and some British designs.

The cockpit was a cramped, uncomfortable cavity found in the 'chest' of the walker, with access gained through hatches around the top or sides of the machine. Most cockpits were covered by armor, though earlier walkers and engineering units had exposed cockpits for improved visibility (these were often protected by an anti-grenade screen). The crewmen were sometimes situated side-by-side, but German designs placed one crewman behind the other and British design staggered crew placement. Both crewmen would be strapped in to prevent unnecessary injury while the machine was in action — the uneven gait and rolling terrain could cause as much injury to an unsecured crewman as a direct hit! Personal comfort varied from nation to nation; due to space and weight constraints, conditions were usually spartan, even dangerous, in early-war models.

Quick escape from a burning walker was often a terrifying and desperate ordeal. All sides placed a maximum height and build restrictions on its crewmen recruitment policies. Only small people could get into the cramped cockpits (as a side effect of this, more than a few women managed to get to the front lines). Hatches were small and difficult to open from the inside; if the machine was on fire it was often fatal. Soviet walkers were, by far, the hardest to escape from. The Germans were very reluctant to use captured Russian machines because they were so dangerous.

Most armored walkers used vision blocks, and some used stabilized periscopes. By late-1941, gyro-synchronized episcopes became available, which facilitated greater vision and targeting. Most machines from this time, however, relied on old-fashioned vision slits and hatches.

MOTIVE POWER

Though both sides experimented with alternative forms of power, by far the most common form of power came from the inline radial engine. In all cases the radial engine was nothing more than a modified air-cooled aircraft radial engine. Though protected in an armored cowling, the engines required elaborate filters and air intakes, making the engines somewhat vulnerable to enemy fire or damage from debris. They were also quite noisy — one could not sneak around in a walker.

The British were the first to show advances in engine technology. In early 1941, experiments were conducted on a sealed, liquid-cooled radial engine connected to a large radiator. Tests were successful, but the hardest part was yet to come: making it fit on a walker. It was eventually to succeed, with the first

modified Roundheads entering service later that same year. They were eventually deployed in North Africa where they performed admirably.

For added mobility across even surfaces, many walkers were equipped with a secondary means of propulsion, either wheels or treads located on the feet or lower parts of the hull. Though it was first formalized by Christie as "Ancillary Propulsion," it was the Germans who first figured out a way to make the wheel system work consistently. By lowering or "collapsing" the lower leg structure, the walker could be converted into a sort of armored car that could move much faster. Such a system soon proved necessary to allow the slow walkers to keep up with the fast-moving armored vehicles they were paired with during offensive maneuvers.

Early German walkers used wheeled Ancillary Propulsion, but as the machines became larger, treads replaced the wheels. The Allies were to prefer wheeled Ancillary Propulsion, which was often easier to repair and the tires being quite easy to replace in the field.

CONTROLS

To get an armored walker to walk and perform required lot of input. This was usually accomplished with two pedals, two control sticks, several levers and a bank of buttons, controls not unlike that of an aircraft cockpit but in half the available space. These inputs were mixed mostly by mechanical means through a set of pulleys, cams, and walkers, called the "first mixer group." Older units ran the output of this group, with input from electrogyroscopes, into a hydromechanical 'second mixer group,' with the input from the levers and buttons/switches mixed in, outputting hydraulic pressure through various lines.

Computator Development

Probably the single greatest advancement for walker technology was the integration of an electromechanical computator to interpret and streamline motion, and later fire control. The Dolmetscher Eins, or D1, was the invention of Konrad Zuse, a young theorist of considerable talent and foresight. Unlike digital computer experiments of the day, Zuse proposed the use of electromagnetic switches — literally modified telephone relay switches — to calculate various functions.

As well, Zuse was to invent the speicherwerke, or mechanical storage, a bank of switches that acted as a form of program storage and helped speed up computation. But such machines were delicate and could only be serviced by skilled technicians.

German Computators were fast and accurate, but were prone to producing errors or resetting if the walker was hit hard enough or the clean containment box was sullied. Their development would later be put to good use in other fields as well, including aircraft design and factory controls.





Germany was to have a solution to the sluggish mechanical control: an electromechanical computer. After 1938, German walkers began using an electromechanical-hydraulic mixer group that took the output of the first mixer group, added in the input from the levers, switches/buttons, and gyros and output hydraulic pressure through various lines. Control by electromechanical means improved control and reaction time of the walker, but with increased complexity in both manufacture and maintenance.

Early-war Allied walkers did not use an electromechanical computer, relying on the older method of control. None the less, daring British agents were able to obtain a partially destroyed German D1 computator from Poland in late 1939, and two fully intact examples during the battle for France.

At first, both Allied scientists just copied the D1 just to get units into the field, but both countries also had burgeoning computer research programs, and soon unique Allied computator systems began to be developed. In 1941 British walkers began to be outfitted with the Pinkerton Mark IV, a computator of uniquely British design. It wasn't as fast as German examples, but was more rugged and in some situations could be repaired by non-specialist vehicle crews.

Though Germany was first off the mark when it came to combat-ready walkers, the Allies had a distinct superiority in certain fields. Allied gyroscopes were more sophisticated and more resilient to the rigors of combat. The British had better radial engines for their machines, and were the first to create a fully enclosed liquid-cooled radial engine. Later variants of the American Longstreet had a better targeting system, though this was rapidly eclipsed by German use of

"televisor" sensors in 1943 and the introduction of the D3 and D4 Computators in 1942.

WEAPONS

All walkers carried at least one machine-gun to protect the vehicle from infantry attack. Most were either mounted on the shoulder or in the chest for a good field of fire. All early examples of walkers were armed solely with MGs, but by late 1939, small caliber cannon were introduced to attack both walkers and light vehicles. Some light cannons were rapid-fire autoloaders, but most were single shot. By 1941, walkers began to sport heavier weaponry; 34 mm, and later 37 mm, cannons became standard armament. Ammunition loads were increased.

For close-range attack, all walkers carried packs of demolition charges — essentially short-range grenades. These were usually spring or compressed-gas launched, though by the time walkers sported arms they could also be manually thrown.

Special weapons were also developed. A walker-carried flamethrower was a fearsome weapon, ideal for anti-infantry and bunker-busting missions. The British introduced a short-range bomb thrower (the Wallis Projector, also referred to by the troops as the 'dustbin thrower') that lobbed a heavy cylindrical charge for destroying tanks or bunkers. Early weapon mixes centered on anti-infantry or light vehicle targets, but it was soon realized that walkers could take on and even destroy tanks. Future walker development began to point towards even bigger guns.

Armored Walker Field Maintenance

A walker was a collection of hand-made machined parts until mid-1942, when mass-production techniques proved that they could consistently produce precision parts. None the less, walkers had to be assembled by hand by teams of skilled workers and technicians. The inner workings were both intricate and complex, with hundreds of feet of hydraulic lines snaking throughout as well as intricate meshing in the control interface. Such complexity often made field maintenance difficult and sometimes improvisational. Talented 'Slicks' (a name coined by walker pilots because maintenance crews were often covered in a layer of hydraulic fluid and oily grime) were constantly challenged to keep their charges in peak fighting order, from calibrating the sights to keeping fluids away from gyroscope seals. Slicks were also masters of creating new parts from scrap, or modifying everyday objects never intended to be used in a walker.





• TECHNOLOGICAL DEVELOPMENTS AT THE END OF 1941

As 1941 drew to a close, the world was a different place. In two short years, warfare and the means to wage it had advanced at a terrifying pace. Britain had already taken its first faltering steps towards true jet propulsion, using the first primitive jet planes in the Battle of Britain and in 1941, stationing a squadron on Malta and in Cairo. Germany had also stepped-up its jet and rocket programs, determining that its current line of bombers lacked the range and capacity to carry the war further afield. The United States, having just entered the war, had already begun research into advanced turboprop and even variable-geometry aircraft the year before, though both still only existed in the imaginations and blueprints of its best scientists.

Of all the combatants, the Soviet Union was perhaps the most behind. Its research programs stunted, its scientific community imprisoned or liquidated, Mother Russia was woefully unprepared for this new type of war and had paid dearly. None the less, a tremendous research program began to swing into action and literally overnight Russia was playing catch-up. Comrade Stalin's "Five Year Plan for Victory" would reap great dividends.

Japan also lacked an adequate research program — its walkers were at best pre-war designs and all lacked any form of advanced computer. Germany did deliver several example devices to Japan, and by late '41 Japan had begun research. However, Japan excelled in the area of aircraft design, and already several innovative designs were entering the prototype stage. Of the greatest interest was rocket and jet propulsion technology.

Walker development had been swift and exponential. A few years before such machines would have been unthinkable. By the end of '41 the machines were still quite primitive, but improved gyroscopes, controls and better weaponry had shown that walkers were far from being an anomaly relegated to the history books. With the exception of the Soviets, all the combatants fielded such machines in large numbers, and many new designs were in the prototype stage.

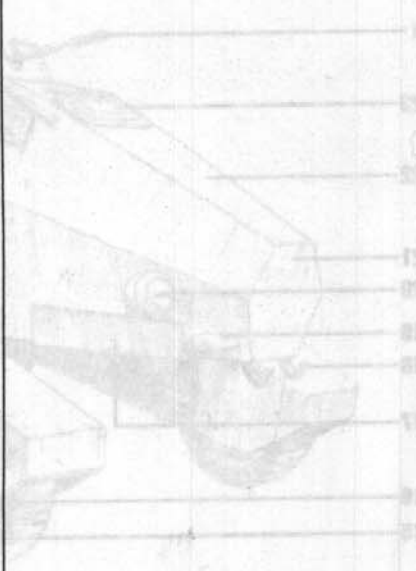
Both sides had realized the value of the computer and all had vigorous and competitive research programs working around the clock to make faster, smaller and more reliable computing devices. Experiments using a computer to aid fire control in tanks and naval vessels were well underway, but it would be some time before any were to enter service in noticeable numbers. Computers also began to see widespread use in research and theory, and the Allies used such machines to help break Axis codes. Both sides would also use the new devices to accelerate the development process of new weapons and combat vehicles, sometimes shaving years off entire programs.

There were also some ominous signs of even darker research. Both Germany and Japan had ongoing programs dedicated to the understanding and production of chemical and biological weapons. Reports of Germany's use of poison gas in the siege of Sevastapol had shown that Germany could field and use such weapons if they so desired. Even Britain and America were secretly conducting research, fearing widespread use of such weapons by the Nazis. All feared such insidious weapons, yet it remained to be seen whether they would be used again in the struggle ahead.

Also of unknown purpose was fledgling research into genetics and biotechnology — even psychology and the human mind. Understanding was medieval at best, but both sides had varied interests in such subjects and effort was expended on some decidedly strange projects throughout the course of the war.

Other, more esoteric research intensified. Both sides had begun to understand and research the unknown power of the atom, both as a source of energy and as a weapon. Projected energy, microwaves, space travel — any eccentric idea was plausible if presented to the right committee or general staff. All seemed fair game and some effort and money was pumped into anything that just might produce something that would give an edge over the enemy.

Technological development had been rapid up to the end of 1941, but the next few years were to prove even more wondrous and terrifying...





VALKURIE WALK-AROUND

"Allow me to introduce you to 'Moritz,' an excellent example of fine German walker technology. We have served for only a few months in North Africa, but in that time we've both seen considerable action and many exciting adventures!

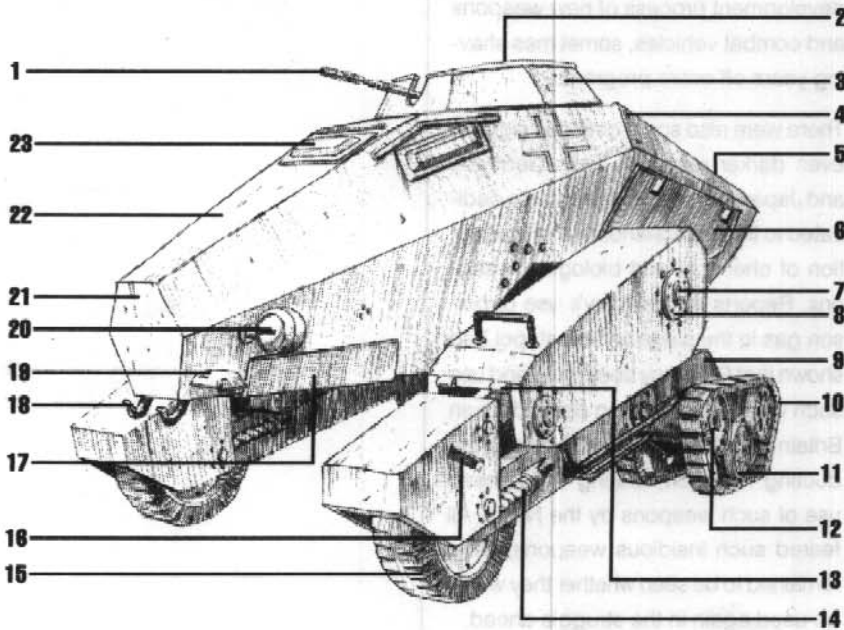
"'Moritz' is a Valkurie, version A. He looks similar to previous models — of which I piloted the 'Loki A' and 'B' — but looks are deceiving! The 'Valk' is the best so far — something the Tommies are learning the hard way.

"The 'A' version is constructed identically to the earlier models, and so the structure is sturdy and reliable. The Langhauser leg assembly is also unchanged, except that the tread carriage on the feet is much simplified — the fitters back at the machine shop are very relieved! But it's still prone to mine damage. If you slip a tread, forget about using the secondary movement in this type of terrain — you'll only waste precious petrol and you're liable to throw the gyroscope out of calibration. Oh yes, the leg armor is improved, though really the legs are always the most vulnerable on any walking machine.

Ground Mode

- 1 7.92 mm MG 34 machinegun
- 2 Split hatch
- 3 Limited traverse gun turret
- 4 Weapon hardpoints
- 5 Cooling air intakes
- 6 Petrol motor under armored hatch
- 7 Articulation lubrication port
- 8 Articulation maintenance hatch
- 9 Main drive support strut
- 10 Dry pin cast steel track
- 11 Adjustable idler wheel

- 12 Drive sprocket
- 13 Forward thigh armor plate hinge (armor removed)
- 14 Foot unit/road wheel suspension
- 15 Road wheel
- 16 Footwell
- 17 Lower emergency escape hatch
- 18 Towing Brackets
- 19 Notek blackout lighting system
- 20 Headlights with blackout covers
- 21 Front Lower Armor Plate
- 22 Main Glacis Plate
- 23 Vision blocks w/Armored Cover



THE COCKPIT

"Let's look inside. The Zuse computer is the newer Z-4 type — don't ask me how it works! But it is quicker at providing firing solutions and reacting to commands from the control sticks or assisting in firing solutions. The D-series computators would take upwards of three seconds to react to my control adjustments — the Z-4 is down to an astonishing 1.5 seconds! However, in spite of its advances, it still cannot accept command inputs from both crewmembers at once — you are liable to reset the computator in some circumstances if conflicting commands are input! Teamwork is critical in combat!

"The cockpit's still the same and still very cramped. You have to be quite agile to escape should it get hit and catch fire — those hatches are alarmingly small for two frightened men to escape from. Sadly, vibration and noise suppression is still largely unaddressed. Long-range recon missions are not very popular with the crews.

"But one improvement is the vision optics. Both the sighting and observation optics have been reworked to make them easier to use and less prone to damage, but really they're still the same old reliable Zeiss-Umbral stereoscopes. It seems our experiences fighting the Ivans have taught us some lessons. I like them, though I hear that a new vision and targeting system is being tested in some units now — it's similar to the Televisor Camera array developed by the Tommies.

THE WEAPONS

"Then there's the weapons — not much has changed really. The main gun is now a 38mm KwK 30 — good against walkers and some light tanks, but it bounces off Tommy quadrupeds and Matildas. Supposedly we're getting some new weapons soon. And for antipersonnel duty there's the reliable MG 34 mounted on top. There's a pipe leading from the engine blowers to the barrel. This helps keep the barrel cool and doesn't force the pilot or gunner to change barrels in battle. I wish we had this at Metz in '40. Oh yes, there's a battery of dischargers to lay smoke or bomblets, though you can also vent your blowers downwards to obscure your retreat.

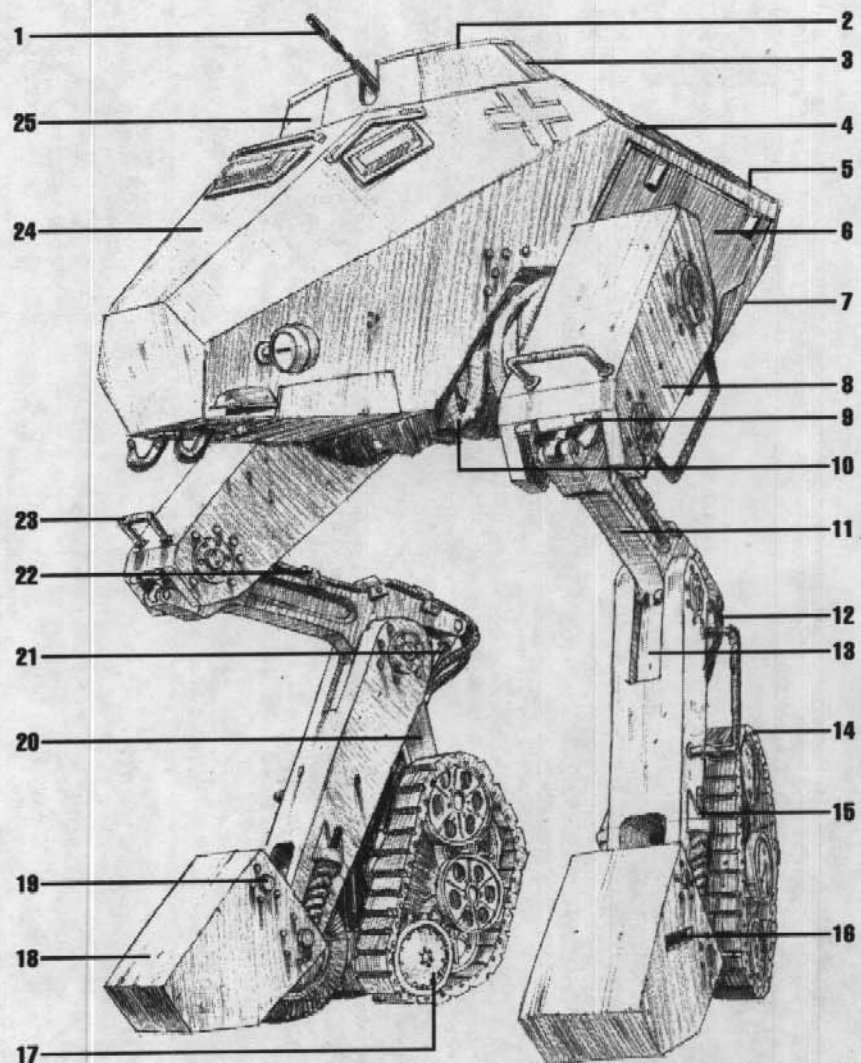
"Oh, before I go, one more thing. Every morning, before you hop in your machine, always check the footwells in the cockpit — scorpions sometimes like to sleep there during the day. I'd recommend blocking the gunner's air vent under the seat."

Walker Mode

- 1 7.92 mm MG 34 machinegun
- 2 Split hatch
- 3 Limited traverse gun turret
- 4 Weapon hardpoints
- 5 Cooling air intakes
- 6 Petrol motor under armored hatch
- 7 Cooling air exhausts (closed)
- 8 Thigh armor
- 9 Fwd. thigh armor hinge (armor removed)
- 10 Hip articulation canvas cover
- 11 Knee Strut
- 12 Armored hydraulic cable
- 13 Sliding lower knee armor plate
- 14 Dry pin cast steel track
- 15 Tension adjustment screw
- 16 Footwell
- 17 Drive sprocket
- 18 Foot/wheel armor
- 19 Armor lock-down point
- 20 Main drive support strut
- 21 Lower leg compression actuator
- 22 Reinforced support bracket
- 23 Welded handhold
- 24 Driver's position
- 25 Gunner's position

THE ENGINE

"Then there's the engine — very reliable but also a problem in the desert. Unlike the water-cooled radial engines used by the Tommies, we still use air-cooled radials. That gives us an edge in not being as reliant on water for our machines, but the sand and debris gets into the engine in spite of the tropical air filters we now use. The engine has to be constantly checked and cleaned or you'll find yourself seizing up, or worse. A piece of advice: although it's tempting to open up the intake shutters to maximize cooling, don't! The problem with forced-air radials is that they kick up dust — the Tommies can always see us coming. Opening the shutters kicks up so much dust that you'll attract enemy aircraft or arty. We lost Heinz that way, badly shot up by a couple of Hurricanes. It's better to keep them closed during a fight, but watch your temperature gauges — open them when things get too hot and then close them when things cool. Don't worry, you'll develop an instinct for this.







CHAPTER TWO: THE GAME

This chapter supplies all the basic rules necessary to regulate battles and skirmishes in the Gear Krieg world. For the purpose of the game, the troopers, vehicles and land features are represented by small models, and a miniature tabletop landscape will stand in for the locales where the battle is to be fought. These simple and dynamic rules let one refight the battles of a war that never was, offering opportunity to try new tactics and field advance units that would not have their place in a more historical setting.



ALL QUIET ON THE EASTERN FRONT . . .

It was still cool; the early morning mists had not yet burned off in the hot springtime Russian sun. Alexandir took off his helmet and scratched his head. It might still be chilly, but the damned helmet made his scalp sweat nevertheless. He looked at his watch and smiled. 5:30 in the morning, only half an hour more till his time on sentry duty ended. He sighed and, clapping his helmet back on his head, resumed walking his section of the line.

"Morning, Alexi." That was Dobteraev. He had the next section of the line.

"Morning, Comrade Corporal." Alexandir didn't like Dobteraev. Anytime the corporal thought someone was challenging his authority, he went straight to the NKVD Commissar, whose idea of maintaining discipline more often than not involved a bullet in the back of the offender's skull.

"Got a light, kid?" The corporal waved a greasy half-smoked cigarette at Alexandir.

"Sure." Alexi proffered a match to the other man. Dobteraev puffed the end of the cigarette back to life.

Dobteraev spat. "I don't know why the hell we have to sit out here anyway," he grumbled. "Didn't the Great Stalin make a treaty with the Fascists?"

Inwardly, Alexi groaned. It was all very well for Dobteraev to complain. But voice a complaint of his own, or question any decision of Stalin's, or the Central Committee's, and he'd be for the Gulag soon enough — if he didn't end up dead in a ditch first.

"I'm sure Stalin and the Generals have their reasons, Comrade Corporal."

Dobteraev only grunted.

"I'd best be turning back now," Alexi muttered, falling back on duty as a reason to

escape the loathsome corporal's presence. He stopped as soon as he'd taken his first step away.

"Did you hear something, Comrade Corporal?"

"What?" There was a soft gurgling close by. As he turned, Alexi saw Dobteraev jamming a bottle into the pocket of his greatcoat. Vodka, most likely.

Alexi held up a hand. There was a low rumbling; it seemed to be coming out from the mists. It sounded like thunder, a low vibrating roar. Alexi felt the hair on his head standing up under his helmet. He became aware of a rhythmic thumping, like great hammers striking the earth.

"What in the name of the Devil's Grandmother is that?" Dobteraev's pale face turned even pastier, and the end of his cigarette fell to the damp grass.

Alexandir saw something looming out of the mist. Cold sweat broke out all over his body. He tried to unsling his rifle, but his hands wouldn't move.

He could see it clearly now and wished that he could not. A huge metal man-like shape, hunchbacked and brutal. A rifle cannon was gripped in one steel fist, and the barrel of a machine gun jutted from the opposite shoulder. The black and white cross of the Fascists was blazoned across its chest. The snarling howl of its engine rose as it strode closer to the two Russians. Looming out of the mist to either side were more of the metal giants.

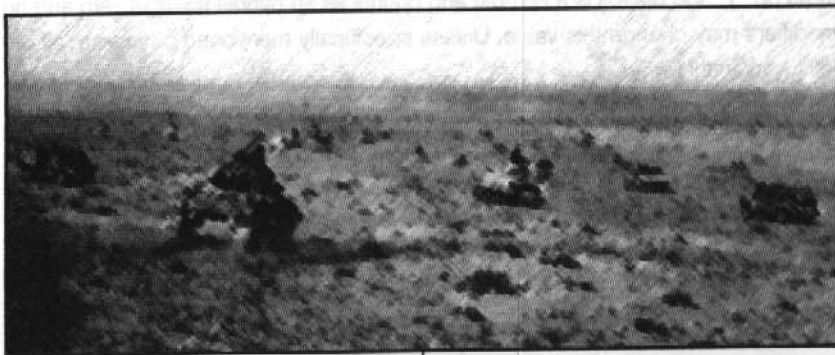
"Bozhe moi!" Dobteraev screamed, turning to run. The machine gun hammered, throwing the corporal to the ground in a bright spray of his own blood. Alexi stood frozen as the shadow of the giant loomed over him...

INTRODUCTION

Recreating past battles has long been a hobby for many. *Gear Krieg* is a ruleset that allows the Players to refight the battles of a war that never was, giving them the opportunity to try new tactics and field advanced units that would not have their place in a more historical setting. This chapter supplies all the basic rules necessary to simulate battles and skirmishes in the *Gear Krieg* world; more specialized rules will be found in subsequent supplements.

For the purpose of the game, the troopers, vehicles and land features are represented by small models. The locale where the battle will be fought is a tabletop landscape, or an approximation of it. A tape ruler (or other similar instrument of measure) is used to regulate movement and measure the range of the weapons.

The playing field can be very detailed or very simple. The choice depends on the preferences and resources of the players. There are three general categories of terrain: simple, moderate and full-blown. Which one is used has no effect on the game mechanics themselves as long as the terrain types (Clear, Rough, Woods, etc. — see page 50) are clearly identified and their boundaries delimited. Modeling game terrain is covered in greater detail in Appendix III.



• COMBAT UNITS

Militaries through out time have organized their forces by breaking them down into smaller, more manageable sections. This enables the soldiers to respond more rapidly to the changing conditions of the battlefield.

In *Gear Krieg*, the standard combat unit, represented on the mapboard by a miniature, is either a single vehicle or an infantry squad. Each combat unit has its own game statistics (see page 45).

Vehicles are generally organized into groups of two or more vehicles, infantry into platoons of three or four squads.

The group's name and number of units can change according to its origin; for simplicity, groups of units are referred to as **combat groups** for game purposes.

In most game scales, individual soldiers can be represented, although infantry squads will definitely be cumbersome if every single trooper is modeled — about one in five will do fine (two trooper figures per base). Human miniatures in smaller scale are available from several sources: modelers are advised to check out the aviation and railroad models section of the hobby shop or other games' miniature lines. Miniatures are covered in greater detail in Appendix III.

An overall Commander must be chosen for each side, with a Second in Command. They can be any units, and their identities can remain secret, but must be noted down for future reference. The Commander's Leadership and Tactics Skills are one level above their quality. The Second in Command's Leadership Skill is one level above normal. If the Commander becomes a casualty, he or she is replaced by the Second in Command. If both are put out of action, all future Leadership Skills are rolled at the Skill level of the crew with the highest Leadership Skill.

• MEASURES AND SCALE

Players should choose a game scale that fits their resources and requirements (see the *Game Scale* table, page 44). Regardless of the scale used, however, a battleground would take up several meters to allow even the smallest weapon to be fired at realistic ranges. The scale of the battlefield thus differs from the scale of the models, a common wargaming convention. Individual units are "enlarged" so that they are visible on the landscape. Ground features, such as buildings and vegetation, are simplified representations of the "real" items, again enlarged for clarity.

The players can use either the English/US system or the metric one, but all players must use the same measure system. To avoid confusion, the rules are written in Measurement Units (MUs) rather than inches or centimeters; the length of one MU depends on the scale used.

The actual position of the unit is considered to be the exact center of the miniature representing it. All measurements are taken from this center point. Since the vertical dimension of the battlefield must be exaggerated in order to be represented on the tabletop (even a tall hill



is merely a fraction of an inch high in most wargame scales), using the height of the miniature for line-of-sight, though an approximation, is good enough for game purposes.

The time frame is either 6 or 30 seconds per game turn (depending on the game scale chosen), resulting in a speed of 6 kph per Movement Point (MPs — see page 49). More difficult types of terrain require additional Movement Points to move through to simulate the reduced speed of the vehicle.

A large-scale battlefield is often best used for urban combat and other restrictive environments (jungle, rocky terrain), so that the action can fit on a reasonably sized table. In such skirmish combat, the time frame is decreased proportionally with the increase in scale. Movement, weapon range bands and other rules remain the same: snap firing at multiple targets in an intense combat zone is imprecise, hence the shortened range. This simulates the frenetic pace of skirmish combat without the need for a new set of rules.

One rule does need to be added, however: in large scale combat, individual infantry troopers can be represented. Unless the miniatures are based together, all troopers must stay under their leader's Command Distance, which is equal to the Leadership Skill in MU. If they do not, the laggards suffer the same penalty as a squad which has lost its leader (see page 61).

The Hand of Fate

Sometimes, certain situations will not be clearly covered by the rules. Rather than lose precious game time through esoteric discussion, disputes should be resolved through chance: simply roll a die to decide.



BASIC GAME MECHANICS

Gear Krieg uses everyday six-sided dice to add a random element to the game. These are sometimes referred to as "1d6" in the rules, "2d6" for two dice, "3d6" for three, and so on.

When two or more dice are rolled simultaneously, their results are not added together. Instead, the highest result is considered to be the outcome of the die roll. If more than one "6" is rolled, each extra "6" adds one (1) to the total. If every die rolled turns up "1," the die roll is a Fumble and counts as an overall result of zero and no modifiers may change this value. Unless specifically mentioned otherwise, all die rolls work in this way.

The totals of die rolls are often influenced by modifiers. Modifiers are added to the total of a die roll. If negative modifiers lower the total below zero, the final result is always zero and cannot go any lower. Modifiers are not applied to Fumbles.

Die Rolling Examples

- Example 1: Player A rolls two dice. The dice read 3 and 5.
The result of the die roll is 5 (the highest individual die result).
- Example 2: Player B rolls five dice. The dice read 1, 6, 4, 6, and 6.
The result of this die roll is 8 (the highest roll + 2 for the two extra sixes).
- Example 3: Player C rolls three dice. All three dice read 1. He has fumbled the die roll. The result is considered to be 0.
- Example 4: Player D rolls two dice and has a +2 modifier.
The dice read 1 and 5. The result of the die roll is 7 (highest roll + 2).

Game Scale Table (Measures and Scale)

Situation	Vehi. Scale	Grnd. Scale	Time Frame	Mvmt .Unit
Large Open Area	1/35	1/35	6 s/turn	MU = 1' = 30 cm
Large Table	1/76	1/76	6 s/turn	MU = 4" = 10 cm
Medium Table	1/87	1/87	6 s/turn	MU = 3" = 8 cm
Medium Table	1/144-N	1/1000	30 s/turn	MU = 1" = 2.5 cm
Small Table	1/285-1/300	1/10,000	30 s/turn	MU = 0.5" = 1 cm

**• RATINGS AND SKILLS**

In *Gear Krieg*, crew and troopers are rated in terms of their Skills. A Skill is a learned talent or ability, which is often improved with practical experience. There are four important Skills in the game: Driving, Gunnery, Leadership and Tactics. It is a common practice to rate a crew in terms of general training; for example, a crew rated as Veteran is assumed to have an average Skill level of 3.

The Skill level is the number of dice used for Skill Tests. Untrained people, such as civilians, have Skill Level 0. They use two dice for Skill Tests, but retain the *lowest* result; if either die comes up "1," they have Fumbled.

MARGIN OF SUCCESS/FAILURE

Most attacks and tactical actions require Skill Tests. These consist of a die roll whose result is compared to another die roll or a fixed number called a Threshold. The difference between both is called Margin of Success (MoS) for the winner and Margin of Failure (MoF) for the loser. If the roll is a tie, the MoS is zero. For instance, a Qualified attacker uses his Gunnery Skill and rolls two dice: a 1 and a 4. The defending Veteran defender rolls three dice for his Driving Skill: a 2, a 3, and a 6. The attacker has a MoF of 2 and fails to hit his opponent.

• NUMBER OF ACTIONS

A vehicle's actions are limited by the total number of crewmen. All vehicles automatically get one action. Vehicles with two or more crewmen get additional actions at no cost. It takes two crewmen to have two actions each turn, four crewmembers to have three actions, and so on. Actions are listed on each vehicle's record sheet. Some or all of these additional actions can be lost

when casualties occur. If the number of crewmembers goes below that minimum, one action is lost. A crewless unit cannot perform actions. It is possible to take more actions than allowed during a combat turn, but each additional action causes a -1 penalty on all actions.

• RECORD SHEETS

Each vehicle has an appropriate record sheet that details the necessary statistics for game play. These sheets allow a clear tally of damage and other important information. The information is broken down into three parts: Attributes, Weapons and Perks & Flaws. Infantry also have record sheets; theirs is discussed in the *Infantry* section (page 61).

ATTRIBUTES

Vehicle Attributes show the overall strength and prowess of each machine. Variations in the numbers between vehicles indicate various design differences. There are nine Vehicle Attributes; depending on the equipment carried, not all are used by a given vehicle.

Threat Values are a good measure of a vehicle's strength. Every combat unit, including infantry, is rated according to a Threat Value (TV). The basic *Gear Krieg* rules provide Threat Values for stock units; games can be easily balanced by allocating an equal amount of points to each side, which are then used to purchase vehicles according to their TVs.

 Skill Levels (Ratings and Skills)

Skill Level	Training Quality
1	Rookie
2	Qualified
3	Veteran
4	Elite
5	Legendary

 Action Examples (Number of Actions)

- fire one weapon once
- fire one set of linked weapons once
- perform a single physical attack (ramming, kicking, punching, etc.)
- activate an auxiliary system (communication, etc.)
- embark/disembark one crewman
- embark/disembark a number of passengers equal to the Size of the vehicle

 Number of Actions Examples (Number of Actions)

A tank has a crew of four people. This vehicle gets its one basic and two additional actions due to its crew complement, for a total of three actions per turn (without penalty). If the tank needed to perform four actions, it would suffer a -1 penalty on all four actions. No benefit is gained from performing less than three actions.

If the tank's crew were injured and one crewmember was incapacitated, the vehicle would have an effective crew of three, giving it only one additional action (instead of two). The short-handed tank would now be able to perform up to two actions without penalty.

If the tank has the Inefficient Controls Flaw (see page 99), and only one crewman remains on board, he will have to choose between driving and spending actions.



Every vehicle is assigned a **Size** value based upon its mass and volume. Size values are primarily used for cargo space and to determine the outcome of physical attacks and collisions. Because it is based on volume as well as mass, Size is not linear: a Size 10 vehicle is not just twice as big as a Size 5 vehicle, but eight times as big.

Combat vehicles always carry a **Crew** (though some may have automated mechanisms instead). Additional crew members increase the number of actions a vehicle can perform; big vehicles generally need many crewmen just to function at all!

A vehicle's **Speed** is translated directly into Movement Points (MPs). Moving a distance equal to the Measurement Unit of the scale selected costs a certain number of Movement Points (see *Movement*, page 49). Vehicles can move at two different rates, or "Speeds." Combat Speed is the highest speed a vehicle can achieve and still attack effectively. Top Speed is twice as fast as Combat Speed, but the vehicle's effectiveness is strongly impaired and it is limited in its maneuvering.

Maneuver indicates a vehicle's ease of control and its responsiveness. The value is used as a modifier to all Driving Skill rolls.

Sensors is an abstracted rating of the quality and sophistication of a vehicle's detection systems (if any are present). This value covers the various sensor systems carried, regardless of their actual nature.

Communication systems, such as radios, allow units to talk to each other during battle and to coordinate their fire or transmit enemy coordinates to friendly artillery fire. Historically, communications systems were not always present in combat vehicles.

Fire Control is a catch-all category for targeting devices and weaponry. Common WWII targeting devices include calibrated telescopic sights, gyro-stabilized mechanical sights, or just a piece of metal with ranged distances marked on it. The Fire Control value is used as a modifier to all weapon attack rolls.

Armor represents the toughness of the vehicle's armored hide and general structure. Three values are listed: Light Damage, Heavy Damage and Overkill. They are equal to one, two and three times the base Armor value, respectively. When a vehicle is hit, the attacker's damage is compared to each of the vehicle's Armor values. The attack's effect is the last Armor stage it has equalled or exceeded (see *Damage* for more, page 58).

CREW SKILLS

Skills indicate the quality of a vehicle's crew. Skills are rated by experience: higher Skill indicates greater ability. Skill 2 is considered average and represents trained soldiers with some experience.

Driving is the Skill of driving and maneuvering a vehicle in combat. Driving is the Skill used to evade attacks, initiate physical assaults and perform difficult maneuvers.

The Skill of aiming vehicle-mounted weapons or using fire control mechanisms, **Gunnery** is crucial to all ranged attacks.

Leadership is the commanding officer's Skill at leading troops and planning local tactics. The Leadership Skill is used for morale purposes.

Tactics represents the commander's expertise in battlefield tactics and the proper positioning and ordering of troops while engaged with an enemy force. This is used to gain tactical advantage throughout the game.

A selection of crew is provided below for use in tactical scenarios. They are listed with a corresponding Threat Value modifier; multiply the unit's TV by this value to determine the final Threat Value. By default, most tactical games should be played with Qualified crews.

WEAPONS

Most military vehicles carry weapons of some kind. Regardless of their performance, these weapons all share similar characteristics, such as Accuracy, Damage Multiplier, Range, Rate of Fire (ROF) and Ammunition.

Fire Arcs determine whether or not a given weapon can be aimed at a target. There are six standard arcs: Forward (F), Right (Rt), Left (L), Rear (Rr), Fixed Forward (FF) and Turreted (T). For more on the fire arcs, turn to page 47.

Each weapon has four **Range Bands** — Short (S), Medium (M), Long (L) and Extreme (Ex) — which represent the effective combat range of the weapon.

Crew Skills

Type	Driving	Gunnery	Leadership	Tactics	TV Multiplier
Rookie	1	1	0	0	x0.25
Qualified	2	2	1	1	x1
Veteran	3	3	2	2	x2.25
Elite	4	4	3	3	x4
Legendary	5	5	4	4	x16

The Short Range is also called the Base Range; the Medium, Long and Extreme ranges are equal to twice, four times and eight times the Base Range, respectively. All vehicular weapon ranges are listed in MUs.

In addition to the effects of the vehicle's main fire control systems (the Fire Control rating), the **Accuracy** of each individual weapon affects the odds of successfully damaging opponents. It is applied as a modifier to each attack roll made with the weapon. Accuracy can drop because of damage (see *System Damage*, page 58).

The **Damage Multiplier** of a weapon is a rating of how devastating and destructive the weapon's attack is. Damage Multipliers work on an exponential scale, not a linear one. A Damage Multiplier of x10 is more than twice as effective as a Damage Multiplier of x5; in fact, it is four times as effective.

Many vehicles carry more than one weapon, and sometimes more than one of a given weapon. The **Quantity** column lists the number of that particular weapon that the vehicle carries.

The **Rate of Fire (ROF)** of a weapon is listed in its own column. A weapon with an ROF of 0 fires single shots. Weapons with ROF of 1 or more are rapid loading and can fire many shots during a short interval of time. Rapid-fire rules, along with various attack options, can be found on page 56.

The amount of **Ammunition** loaded into a weapon is listed next. If a weapon's ammunition drops to zero, it can no longer fire. Some attack types, such as physical melee attacks, do not expend ammunition.

THE GAME TURN

A tactical game is subdivided into **combat turns** that simulate a short interval in the battle. Units get a certain number of actions during that turn, which can be used to shoot, communicate important information or scan the area. If Players truly want to take more actions than a vehicle's crew complement allows, they can still do so, but this will cause a penalty to each action (the crew will be trying to get more things done in the same amount of time and will thus be less careful overall).

A combat turn is divided into four steps. During each turn, these four steps occur in order. An additional step, Step Zero, occurs only at the beginning of the game.



• STEP ZERO: SET-UP

A battle always begins with the Set-up, which occurs only once. Pre-designed scenarios have clearly defined set-up locations for each faction. When not using pre-designed scenarios, one Player should set up the terrain and the other may choose which side of the table will be his home edge.

A Tactics Skill test is made by each side based upon the Skill level of the Commander. Fumbles count as a die result of one. Reroll ties. The winner chooses which Player will begin placing his or her combat groups upon the table. Players should alternate, each placing one combat group at a time on the table. After placing a unit, the Player must declare what speed (stationary, Combat or Top Speed) it is moving at.

If, during the first turn, a unit is attacked before it has been moved, it is treated

as if it were moving at the maximum number of MUs possible for its speed for the purpose of defense rolls.

Each Player should record the result of the Tactics roll. Each point represents one Tactical Command Point (TCP) that can be played during any Activation Phase. Command Points represent an action reserve for unexpected situations; they are fully explained further on (see page 49).

• STEP ONE: DECLARATION PHASE

Both sides declare any extra actions and individual evasive maneuvers for the turn. Use one or more counters to mark extra actions taken to avoid confusion during game play. This token can be placed either near the playing piece or on the record sheet, whichever the Player finds more suitable.



• STEP TWO: INITIATIVE PHASE

Initiative determines which side has the advantage during the present turn of combat. Each side rolls an action test based on their commander's Tactics Skill. If only two machines are facing each other, the Driving Skill is used instead of the Tactics Skill. The highest result wins. Draws are rerolled.

The winner gains initiative for one full turn. Take the difference of the two rolls; the loser of initiative gains that many Initiative Command Points for the turn to react to the enemy. Unlike Tactical Command Points, Initiative Command Points are not conserved from turn to turn; at the end of any turn, all unused Initiative Command Points are lost.

The side that wins initiative chooses which side goes first for the rest of the turn. Once the number of Command Points is determined and recorded, the Initiative Phase ends.

• STEP THREE: ACTIVATION PHASE

The side whose turn it is to play may move any or all units in one of its combat groups. Units that shift speeds (Combat to Top and vice-versa) must declare that they are doing so immediately after movement (the new speed will only be applicable next turn).

Actions, such as firing or activating a system, may be resolved at any time before, during or after the movement. Attack penalties are based on the unit's total movement; if half-Combat Speed is announced for attack purposes, the unit cannot spend more than half its total Combat MPs.

Each unit moves and takes its actions before another unit is activated. If a unit does not move or act when its combat group is activated, it cannot do so at a later point in the turn.

Once every unit in the combat group has moved and acted (or forfeited its chance to do either), the other side activates one of its own combat groups, which may move and take action(s). This exchange goes back and forth until all groups have moved and acted.

A combat group may only move once per combat turn. If one side no longer has any combat groups left to use, the opposite side activates its remaining combat groups one by one until they have all been moved.

SNAP-FIRE

At any time during the activated unit's movement, any enemy unit that has not already been activated may use one (or more) of its actions to fire or perform a task against the moving unit (and only against the moving unit). This is called "snap fire." Attacks may be directed at any point along the moving unit's path, but the unit's full movement counts towards the Defense roll. The total MP allocation of the target is used to deter-

mine the defense speed modifier, even though the actual displacement may be shorter, because this is a hurried reaction for the attacker.

Snap firing does not cost Command Points (unless the firing unit needs to turn around to fire), but it reduces by 1 the total number of attacks that the snap firing unit has for the turn. The defender must spend at least one MP or end its movement before each of the attacker's actions if more than one action is used. Forward observers (units that spend an action feeding enemy coordinates to friendly units) must always act before the firing unit(s).

• STEP FOUR: MISCELLANEOUS EVENTS PHASE

During this phase, any unusual events, such as long-range artillery and bombing attacks, are resolved. Most of these are optional rules that are not covered in this basic rulebook. Once this phase is over, Initiative Command Points go back to zero.

Repeat Steps 1 to 4 until the battle is resolved or pre-planned objectives are met. A combat group may only move once per combat turn.

Combat Summary Table

Step One: Declaration Phase	Both sides declare any extra actions and defensive maneuvers.
Step Two: Initiative Phase	Each side rolls an action test based on its commander's Tactics Skill.
Step Three: Activation Phase	Move any or all units in one combat group. Once every unit has acted, the other side activates one of its own combat groups.
Step Four: Miscellaneous Events Phase	Any action not spent at this point is lost. Long-range artillery and bombing attacks are resolved. Initiative Command points go back to zero.

Repeat Steps 1 to 4 until the battle is resolved or pre-planned objectives are met. A combat group may only move once per combat turn.

• COMMAND POINTS

Command Points represent the commander reacting to or anticipating the enemy's actions. There are two types of Command Points: Tactical Command Points (TCPs) and Initiative Command Points (ICPs). TCPs are available throughout the game, but cannot be regained once spent. ICPs are valid for one turn only, but are refreshed during each new Initiative roll. Other than this, there is no functional difference between the two.

Command Points may be used by any unit with a functional Communication system or within Command Distance (a number of MUs equal to the Commander's Leadership Skill) of its commander. There are five possible uses for a Command Point.

Action: Command Points can be used as an additional regular action, incurring no penalty.

Activation: A Command Point can be used to activate a unit out of sequence — to get out of harm's way, for example. In the latter case, the unit must not have been activated (i.e., moved) previously, and it cannot be moved again when its combat group is activated (though it may act if it has any actions left).

Block: A Command Point may be spent to cancel a CP spent by the enemy.

Defense: One Command Point can be used to buy a one-time +2 modifier to a single Defense roll (representing a warning shout).

Reaction: A Command Point may be used to turn a unit around by up to 180 degrees, even if it has been activated before (and thus has no Movement Points left).

The table at right summarizes the Command Point functions.



MOVEMENT

A unit can cross a certain distance based on its Movement Points (MPs). The vehicle record sheet contains the values for Combat Speed and Top Speed. Combat Speed allows a vehicle to engage in offensive actions unhindered. Top Speed is twice as fast as Combat Speed, but severely impairs actions. A ground unit is never forced to move, unless it is at Top Speed (see page 50).

Speeds are listed in MPs; one MP equals movement across one Measurement Unit (MU), or about 6 kph on clear terrain. Thus a vehicle with a Combat Speed of 6 MPs moves at about 36 kph on flat, open ground. Every turn, each vehicle receives as many Movement Points as its current speed (Combat or Top).

Each Movement Point (MP) lets the unit move a distance equal to one Measurement Unit. The actual tabletop distance will vary according to the scale, and thus the MU, chosen for the playing surface; see the *Game Scale Table*, page 44.

Various terrain types negatively affect locomotion methods. Moving on difficult ground will cost more MPs depending on the type of terrain: the distance is multiplied by the normal MP cost for that type of terrain (see the *Terrain Table*, page 50). For example, moving through 1 MU of Rough ground (MP cost of 2) will cost the same as moving through 2 MU of Clear ground (MP cost of 1).

Using Command Points (Command Points)

- Extra action (with no dice penalty)
- Activate a unit out of sequence (if it hasn't been activated already)
- Cancel a Command Point spent by the opponent
- Defensive maneuvering (+2 to one defense roll)
- About-face (change facing by up to 180°)



• TERRAIN

Terrain affects both a unit's movement and the ability of other units to spot and attack it. These two factors are measured by a given terrain's MP Cost and its Obscurement. The rougher and thicker the terrain, the higher these two numbers.

Some terrain types merely slow down a unit, which is reflected by their higher MP cost. Some, however, are more treacherous: units might get bogged down, vehicles could break an axle, etc. These terrains are identified with a "D" besides their MP cost: this means they require a Dangerous Terrain test.

The Dangerous Terrain test is taken every time a unit enters a terrain identified as dangerous or starts its move already in it. The owning Player must roll the Crew's Driving Skill (or the infantry's general Skill) against the terrain's MP cost; if failed, the vehicle must stop immediately and all further MPs are lost for the turn. If the test is fumbled, the vehicle takes an automatic Light Damage result in addition to stopping.

• COMBAT SPEED

A vehicle normally receives a number of Movement Points equal to its Combat Speed value. If the vehicle expends none of these Movement Points to move, it is considered stationary. Otherwise, the vehicle is said to be traveling at Combat Speed. Attacks can be made normally at this rate of movement.

Vehicles moving at half their Combat Speed or less gain an additional +1 to their attack rolls due to the additional stability provided by lower speeds (see *Attack Modifiers*, page 54).

A vehicle moving at up to half Combat Speed can opt to move backward instead of forward. Reverse movement is not possible at higher speeds.

• TOP SPEED

A vehicle that expends its full Combat Speed MPs can shift to Top Speed in the next turn. This shift must be declared by the Player immediately after moving the unit. The vehicle is considered to be at Top Speed for attack and defense purposes for the rest of the combat turn. Players should put a Top Speed counter beside the vehicle.

In subsequent combat turns, the vehicle receives Movement Points equal to its

Top Speed value. The vehicle must expend a number of Movement Points greater than its Combat Speed while moving at Top Speed, even if it means a collision. A vehicle may return to Combat Speed after any number of turns of Top Speed movement. The Player declares the return to Combat Speed immediately after moving the unit.

Vehicles moving at Top Speed may not use Hull Down positions (see page 67). If a vehicle moving at Top Speed is forced to come to a complete halt due to a failed Dangerous Terrain test, but has yet to spend the minimum required MPs, it crashes as described in *Turning*, next page.

Terrain Table

Terrain Type	Infantry	Walker	Ground	Obscurement
Clear	1	1	1	0
Rough, Rubble	1	1	2	0
Sand, Dust	2	2/D	2/D	0
Woods	1	1/D	2/D	1
Jungle	2	2/D	3/D	2
Swamp	1/D	3/D	4/D	1
Water (Shallow)	2	2*	3*	0
30 degree Slope	add 4	add 2	add 2	-

Terrain marked "D" requires a Dangerous Terrain Test.

*Only Amphibious units may enter. Others will flood and automatically be put out of action. Amphibious units cannot enter or exit this terrain while moving at Top Speed.

Movement Example

A walker is moving at Top Walking Speed. The scale of the terrain is 1/100, making one MU 10 cm across. The vehicle receives (6 MP x 10 cm =) 60 cm for movement purposes. Presently, the walker is running through a thick jungle. Jungle normally cost 2 Movement Points per MU to cross. Thus, for each centimeter moved, the actual movement cost is (1 cm x Jungle Cost 2 =) 2 cm. Each centimeter of Jungle terrain will cost the walker 2 cm of movement, so it can move only up to 30 cm in the jungle.

Speed Examples

A Cavalier walker is rolling in Ground mode at Combat Speed (3 MPs). It may spend anywhere between 0 and 3 MPs. If it spends zero, it is considered to have stopped moving and is immobile. If it spends the full 3 MPs, it has the option to shift to Top Speed. The Cavalier's Player opts to do this and declares the speed shift immediately after moving the Cavalier. To making record keeping easy, the Player puts down a "Top Speed" marker beside his unit miniature on the table.

• TURNING

A vehicle can turn up to 60 degrees left or right at no MP expense after moving at least one MU. If it wants to turn 120 degrees or more, or turn before moving, it will cost 1 MP. A vehicle could spin around 360 degrees, but it would still cost just 1 MP.

Turning 120 degrees or more while moving at Top Speed requires a Driving Skill roll versus a Threshold of 3 plus the terrain MP cost (this does not count as an action). If the roll succeeds or is a draw, the turn occurs without complications. If the roll fails, the vehicle skids forward 1 MU before taking the turn (if something is blocking the way, treat as a ram, page 54).

If the roll Fumbles, the vehicle skids forward 1 MU then crashes; this ends the vehicle's movement. One die is rolled to assign either a Light (1 to 3) or Heavy (4 to 6) random damage effect to the vehicle (see *Damage*, page 58).

• MULTIPLE MOVEMENT SYSTEMS

Vehicles with multiple movement systems, such as walking and rolling, are able to switch modes during combat to make the best use of the terrain.

A vehicle may switch modes only while at Combat Speed, never at Top Speed. This shift must be declared by the Player immediately after moving the unit. The vehicle is considered to be using the new movement mode until it is switched again.

A vehicle with multiple movement systems may only switch modes once per combat turn.

COMBAT

Combat is essentially divided into two distinct phases, the first to find the enemy, the second to attack it. Both provide offensive and defensive opportunities that must be taken advantage of in order to gain the upper hand in battle.

Game play is divided along much the same line. A unit must be able to acquire its target (either visually or through devices) before it can attack it.



• LINE-OF-SIGHT

It is a requirement for a unit to "see" its target to fire. The ability to detect and target an opposing unit is called, for simplicity, having a Line of Sight (LOS). This does not necessarily imply that the target is within human visual sight, merely that it can be acquired and locked on by the sensors and fire control devices available to the detecting unit. Units always are considered to have a Line of Sight to their target unless one of the conditions in the table below exists.

There are several simple ways to check Line of Sight. The string is a common and easy-to-use method. An ordinary

string or thread is placed from the sensors of the firing unit to the visible portion of the defender (or the center points of both, if playing the tactical scale). If the string is not hindered in any way, the LOS is clear. If the string cannot draw a straight line to 50% of the target or more, it is Concealed. Other methods include direct visual sighting (impractical on large playing surfaces) and, for the well equipped, laser pointer sighting.

Range is measured from the center of the attacker's base to the center of the target's base. This prevents problems with long gun barrels and other modeling features.

Blocked Line of Sight (Line-of-Sight)

- The Concealment value of the terrain between the unit and the target is greater than the unit's Detection rating (see next page).
- Any terrain between the two units is higher than both units.
- Either unit is within the dead zone of an intervening elevation level. A unit is within a dead zone if it is adjacent to an interceding elevation increase.
- The target is beyond the detecting unit's sensor range.



CONCEALMENT

Concealment is equal to the total Obscurement ratings of all terrain directly between two units (rounded down to the nearest whole number). If one of the units is on a higher elevation level than the other, only the terrain at the higher elevation level and the terrain of the defender's location are counted for Concealment purposes.

The Terrain table (page 50) indicates the Obscurement values for each type of terrain, per whole MU. Obscurement makes a target more difficult to detect and cause penalties that are applied to the attacker's roll.

DETECTION

Infantry and crewmen are always on the lookout for enemy units. Units thus have a passive Detection Rating: this detection value is used to calculate whether a unit can acquire its target.

Add a vehicle's Sensor rating (if present) to its crew's Skill level to produce the vehicle's passive sensor value. Any vehicles not equipped with sensors, including infantry, get a base Detection value of 4 in daylight or 2 at night from unassisted vision. The highest value is the vehicle's final Detection value. The detection rating may be modified by certain Flaws (see page 98).

The range at which a unit can be detected is based on its Size. Each range band measures a number of MUs equal to the Size of the target (x2 for Walker vehicles). Each range band after the first adds one point of Concealment. In other words, there is no modifier to Concealment for targets which are closer than a number of MUs equal to their Size.

ACTIVE SENSOR LOS

Some vehicles may carry primitive sensor suites to locate enemy units lurking nearby: radar, simple IR cameras and spotlights, etc. By performing an active sensor sweep, these systems can be used to obtain a line-of-sight on an enemy unit even when visual or passive sensor LOS is impossible.

To activate the vehicle's sensors, a Crew Skill test, modified by the vehicle's sensor value, is made (it is simply assumed that the sensor most suited to the task was used). The Threshold number is equal to the target's Concealment value.

One is subtracted from the threshold for every MU the defending unit moved this turn and every weapon the defender fired this turn. Add the rating of any Stealth Perk or Large Sensor Profile Flaw of the defender to the Threshold.

A success means the defender has been acquired and may be attacked. A draw, failure or fumble mean the target has not been found (fumbles have no further effect in this case). Vehicles without sensors cannot perform active sensor detection. Active sensor sweeps, unlike passive or visual detection, require a full action to complete.

Detection Example

A scout car has a Sensor rating of -2 and its Qualified crew has a Skill level of 2. The vehicle, therefore, has a passive sensor rating of 0. Its Detection value is 4 (visual) and its Night Detection value is 2 (highest value is used between sensor and visual). The vehicle can, however, perform active sensor sweeps.

The scout car's crew wishes to attack a Size 6 walker lurking in woods 7 MUs away. The range would normally incur a -1 penalty on detection (7 being greater than 6, but under 12), but since the walker is so tall the range bands are doubled, which removes the penalty. There are two full MUs of woods between the units, adding two points to the walker's Concealment. Since the total Concealment is 2, well under the scout car's Detection, the target is acquired and may be fired upon.

Active Sensor Threshold Modifiers (Active Sensor LOS)

Applied to Attacker's Roll

- Sensor Rating

Applied to Concealment Threshold

- Stealth or Large Profile modifier (variable, by default 0)
- Movement Penalty (-1 per MU moved by the target this turn)
- Combat Penalty (-1 per weapon fired by the target this turn)

Active Sensors Example (Active Sensor LOS)

There are four MUs of woods between the scout car and its target. Since it's a night combat, it cannot normally detect it, since the total Concealment (4) is greater than the Night Detection Rating of the scout car (which is 2). Expecting trouble, however, the car's commander has activated his Würzburg PKR-43 infra-red sensors to detect hidden enemies. The Concealment value of 4 is the base Threshold for the Sensor Skill test.

The target moved one MU this turn. This reduces the Threshold by 1, down to 3. The target fired its machinegun at some nearby German infantry during the current turn, which drops its Threshold down to 2.

The car's sensor system is rated at -2; early detection equipment was quite crude and unreliable. The crew spends an action and rolls a Skill test, obtaining a 5. They subtract the Sensor rating (-2) to the roll and obtains a final score of 3. This is just enough to detect the target, which is now acquired.



• **ATTACKS**

If a unit has a Line of Sight to a target within its weapon's firing arc and range, it can attack that target. When an attack occurs, an opposed Skill test is required to determine the success of the attack. The attacker uses his unit's Gunnery Skill and the defender uses his unit's Driving Skill to make the test, both rolls modified by the appropriate situation modifiers (see summary at right).

If the attacker wins the Skill test, the attack succeeds. If the defender wins or if a draw occurs, the attack misses. The table at right contains a summary of the modifiers to both rolls; they are explained further on pages 54-55.

FIRING ARCS

Vehicles may only target opponents that are within their weapons' firing arcs. Each weapon is mounted within a certain arc and can only fire in it; targets that lie outside the firing arc cannot be targeted.

There are six common firing arcs: Forward (F), Right (Rt), Left (L), Rear (Rr), Fixed Forward (FF) and Turreted (T). The first four are 180-degree arcs on their respective sides. Side arcs include directly forward and backward. The fixed forward arc is a 90-degree arc on a vehicle's front facing. Note that side or rear fixed arcs are also possible, but uncommon. Turreted arcs span 360 degrees.

Infantry squads do not have facing, as the men can quickly turn around to respond to a threat or to move. They do not have firing arcs and may move or attack anything in a 360-degree radius around them.

Line of Sight Examples

A Shiki 38 walker is faced with a Longstreet and has taken shelter in jungle vegetation (Obscurement 2). Two Jungle MUs intervene in addition to the terrain the Shiki is in, for a total Concealment value of 6. This is greater than the Longstreet's Detection of 4, so the Shiki remains hidden.

If either unit is in a dead zone, line of sight is obscured. A Cavalier is within range of an enemy tank (6 MUs) but both units are just behind ridges. The tank is hidden and cannot be fired upon. If the walker were to climb the nearest ridge, it would still not be able to see the tank because the vehicle is located in the dead zone at the base of the elevation. If the walker moves to the other ridge, it will then see the tank.

Attack and Defense Modifier Summary (Attacks)

Attack Roll Modifiers:

-	Fire Control Rating
-	Weapon Accuracy Rating
-	Range Modifier
-	Attacker Movement Modifier
-	Obscurement Penalty

Defense Roll Modifiers:

-	Maneuver Rating
-	Defender Movement Modifier
-	Arc of Attack Modifier

Possible Outcomes:

If Attackers total is above Defender's	HIT
If Attacker's total is equal to or below Defender's	MISS

Attack Examples (Attacks)

Walker Alpha shoots at Walker Beta. Alpha moved at Combat Speed and used up all his MPs (+0). His targeting system and weapon accuracy are both rated at +0. He is attacking within the "Short" range band (2 MUs) of his weapon (+0). There is no obscuring terrain between them. Alpha's pilot rolls his Gunnery Skill and obtains a total of 4. Since Alpha's modifiers total up to +0, his final attack roll is 4. Beta must now make his defense roll. On his last move, Beta traveled 7 MUs (+1). Beta's Maneuver is -1. Alpha's attack occurs in Beta's forward defense arc (+0). Beta's pilot rolls his Driving Skill test and obtains a score of 5. This is modified by the situation bonuses to yield a final total of 5. Since 5 is greater than 4, Beta avoids Alpha's attack.

Walker Alpha is again shooting at Walker Beta. Alpha moved at Top Speed (-3). His fire control system was damaged during the battle and Alpha now receives a -1 modifier to all attacks. He is 5 MUs away from Beta, and is at Long range with his chosen weapon (-2). In addition, one MU of Woodlands terrain (Obscurement 1) lies between the two (-1). Alpha makes its Gunnery Skill test and obtains the remarkable roll of 8. Unfortunately, after the total -7 penalty is applied, the final total is only 1. Beta attempts to avoid this attack. On its last move, Beta only traveled 2 MUs (-2). In addition, Alpha now lies in Beta's rear defense arc (-2). Beta still has his Maneuver (-1). Beta rolls his Driving Skill test and obtain a lowly 3. After the situation modifiers are applied, this is reduced to a final total of 0 (since negative numbers are not allowed). Alpha's total of 1 is greater than Beta's total of 0, so Alpha has successfully attacked Beta with a Margin of Success of 1.



• ATTACKER MODIFIERS

Life is not a firing range; combat is always harder under certain conditions, easier under others. Modifiers resolve this by introducing penalties and bonuses to each and every combat roll. Apart from the quality of the vehicle's Fire Control system and the accuracy of the weapon, other factors apply: the range to the target, the cover between the attacker and defender and the attacker's own movement.

RANGE

Every ranged weapon is rated by a value known as its Base Range. The Base Range is expanded into four Range Bands, each one doubling the maximum distance of the preceding one. The further away the target, the harder it is to hit and damage. Point Blank is a special range band for attacks that occur when the miniatures touch one another; only units with Walker movement benefit from it (infantry or walker vehicles).

OBSCUREMENT

Various terrain types, such as swamps and wooded areas, obscure a target and make it difficult to hit. The Obscurement value of the terrain (see *Line of Sight*, page 51) is subtracted from the attacker's roll to represent both the lack of accuracy and the damage absorption caused by the intervening cover.

Indirect fire is an exception to this. Since the attack is arcing through the air above the intervening terrain, some of the Obscurement may be ignored (see *Indirect Fire*, page 56).

MOVEMENT

A moving gun platform has a higher chance of missing than a stationary one. Conversely, a unit that is moving slowly generally has less trouble keeping its weapons trained on a target. Stationary attackers (i.e., that have spent no MP) are the best firing platforms.

Since the penalty for moving slowly is higher than the attack benefits gained, Players must be careful to place their slow-moving units in a position where return fire is least likely.

• DEFENDER MODIFIERS

The Defense roll is an abstract representation of the target's attempts at evasion and its use of any available cover (both impossible to properly represent at the tabletop level). Targets rely on the following modifiers to help them avoid shots and blows. In general, the only defense of large and ungainly vehicles is speed and cover.

MANEUVER VALUE

Each vehicle has a set maneuver value by design. Negative maneuver values are for slow, ponderous vehicles like battleships and large tanks. Positive maneuver values are for fast and agile vehicles like motorcycles.

TARGET SPEED

An enemy unit's speed affects how easy it is to hit. Speed modifiers are determined according to the ever-increasing scale on page 55. If the target has yet to move in the turn, its last recorded movement is used to determine its modifier. On the first turn of combat, assume that the vehicle has moved the maximum number of MUs for its current speed in its current terrain.

DEFENSE ARC

The defender's orientation, when attacked, can reduce his chances of successfully escaping the attack, either because of inattention or thinner armor. Most combat vehicles carry less armor on their back than on the front, due to unavoidable engineering concerns. More importantly, however, crews cannot defend against attacks they do not see coming. Attacks coming from the rear are much more dangerous than attacks from the front (see the *Defense Arcs* diagram on page 73).

• MELEE ATTACKS

Ground vehicles can ram, but few drivers exercise the option. The old-fashioned close-in attacks, however, remain available to both infantry and walker vehicles. Ramming, punching, kicking, stomping and all manner of melee weapons are often used on the battlefield when ammo runs out.

RAMMING

Ramming is an Opposed Driving Skill roll. Unlike other attacks, ramming inflicts collision damage on both the attacker and the defender. Impact speed is first determined based upon the direction of the ram. Head-on collisions add the speeds of the attacker and defender. Side impacts take the attacker's speed, and rear collisions take the difference between the two speeds.

From the impact speed, a damage modifier is determined using the Impact Speed Table (see facing page). This is added to the Size of each vehicle involved in the collision to determine its Impact Damage Multiplier. Each vehicle will take an amount of damage equal to the Margin of Success of the Attack multiplied by its opponent's Impact



Damage Multiplier (see *Damage*, page 58). The larger the unit, the more damage it will inflict on the other unit involved in the collision. If the attacker gets a MoF and still has MPs to spend, he moves one MU forward and stops there; otherwise, he stops at the collision point.

PUNCHING

An arm or equivalent appendage is required to punch (this is noted on the vehicle's record sheet in the Perks section). Punch attacks require a Driving Skill roll (modified by the Fire Control rating) versus the defender's Driving Skill (or Infantry Skill, if attacking infantry units). The Damage Multiplier of a vehicle's punch is normally equal to the rating of the punching arm, but the pilot may elect to "pull" the punch to lower the DM and thus reduce the damage.

KICKING AND STOMPING

Kicking other vehicles and stomping infantry squads are both valid attacks for a walker vehicle. Kick attacks require a Driving Skill roll (modified by the Maneuver rating) versus the defender's own Driving (or Infantry Skill, if attacking infantry units). If successful, the Margin of Success is worked out and the damage calculated as normal. The Damage Multiplier of a kick is equal to the Size of the vehicle.

MELEE WEAPONS

If any melee weapon is listed on the record sheet, the crew may attack the target using its Driving Skill, applying the Fire Control as a modifier. If successful, the Margin of Success is worked out and the damage calculated as normal. A melee weapon's Damage Multiplier is listed in the Weapon section of the vehicle record sheet, along with any special effect or rule.

Attack Modifiers

- Range Modifier

Point Blank	Special range (base-to-base contact; infantry and walker only)	+1
Short	(from 1 MU to base range)	0
Medium	(from previous to two (2) times base range)	-1
Long	(from previous to four (4) times base range)	-2
Extreme	(from previous to eight (8) times base range)	-3

- Obscurement Modifiers

Swamp	1	Woods	1
Jungle	2	Water	2*

- Movement Modifiers

Stationary	+2	Half Combat Speed or less	+1
Combat Speed	+0	Top Speed	-3

* Only produces Obscurement if defender is an Amphibious vehicle.

Defense Modifiers

- Maneuver Value

- Target Speed Modifiers

Hexes Moved	Defense Modifier	Hexes Moved	Defense Modifier
0	-3	1-2	-2
3-4	-1	5-6	+0
7-9	+1	10-19	+2
20-99	+3		

- Defense Arc Modifiers

If attack is in the defender's Front	0
If attack is from defender's Rear Flank	-1
If attack is from defender's Rear	-2

Ramming Speed

Ramming Direction

Impact Speed

Head On	Attacker Speed + Defender Speed
Side	Attacker Speed
Rear	Attacker Speed - Defender Speed

Impact Speed Modifiers

Impact Speed	Damage Modifier	Impact Speed	Damage Modifier
1-2	-2	3-4	-1
5-6	+0	7-9	+1
10-19	+2	20-99	+3

Physical Attack Example (Melee Attacks)

Out of ammunition, a walker (Size 6) decides to run up to the light tank it disabled last turn and finish it off with a well-placed kick. The damaged tank is not very maneuverable and rolls a low 2 for defense. With modifiers, Omicron's pilot rolls a 6, for a MoS of 4. The final damage is (4 x 6 =) 24 points of damage. The walker jumps on the hapless tank's hull and kicks the turret clean off.



• DEFENSIVE MANEUVERS

"Defensive Maneuver" is a catch-all term used to describe a unit's extra efforts in looking for the tiniest bit of cover, moving more carefully than usual and generally keeping its head down. A declaration of Defensive Maneuvers counts as an action and must be made at the start of the combat turn (units may not "abort" to Defensive Maneuvers later in the turn).

Performing Defensive Maneuvers adds a +3 bonus to all defense rolls for the combat turn but prevents the unit from attacking or performing any other action that turn. Multiple "evasive actions" cannot be performed to accumulate defensive bonuses. Defensive Maneuvers may not be taken while moving at Top Speed.

• AIMED SHOTS

A gunner may elect to perform an aimed shot versus a specific component of a vehicle rather than just aim for the center of mass. Allowed targets are Fire Control, Structure, Crew Compartment, Movement Systems and Auxiliary Systems. These locations are represented by the numbers 1 to 5 on the Systems Damage Table (see *Damage*, page 58). Aimed shots have a -1 modifier to their roll, but if the attack succeeds, result 6 on the table also corresponds to the desired location.

Aimed shots, being less likely to hit than other attacks, are usually best used for specific objectives. For example, destroying a vehicle's movement system helps to capture it, while specifically targeting the fragile antennae array of the opponent's command walker is more likely to silence it than a random hit to its hull.

For scenario purposes, high precision shots versus tiny targets (headlights, for example) are possible. The shot must be aimed (-1 Accuracy) and a Margin of Success of at least 3 is required to hit. If the MoS is lower than 3 but above 0, the attack hits the targeted location but not the tiny target. For example, a gunner wishing to blow out a headlight on the walker's structure would make a precision shot; if the MoS is under 3, he hits the Structure instead. Small targets and their locations are mentioned in the scenario when this option is available.

• INDIRECT FIRE

Indirect fire is used by artillery batteries and other vehicles that have weapons capable of indirect fire. Indirect fire is primarily used for long range fire support, though it is also useful to attack targets that are out of visual line of sight. Only weapons that are specifically designated as indirect firing weapons may use this form of attack.

To fire indirectly, an allied unit must be designated as the forward observer. The forward observer must have a valid LOS to the target. Being a forward observer takes up one action and a Communication roll. A single forward observer can relay firing coordinates to multiple indirect fire units.

Indirect attacks can be performed over obstacles, including interfering elevation levels, because the attacks are angled over the obstructions. The attacker receives the forward observer's Obscurement modifier to attack instead of his own. If the attack is successful, however, only the Obscurement of the terrain in the target's location counts, thus increasing the MoS. If the attack fails, the shot scatters in a random direction by a number of Measurement Units equal to the MoF (see template on page 73).

• BURST FIRE

Burst fire is abstracted into a form that is easier to use during the game. Any weapon with a Rate of Fire (ROF) of 1 or greater is capable of burst fire. The Rate of Fire is added to the weapon's Damage Multiplier when the weapon is used against vehicles and other hard targets. This represents the increased damage effect caused by the pounding of many projectiles upon the target's armor. A successful burst fire attack versus infantry and other targets with no Armor value, on the other hand, adds the ROF bonus to the Margin of Success instead of the Damage Multiplier to represent the devastating effect of the multiple rounds on the unprotected target(s).

Ten rounds of ammunition are expended for every point of Rate of Fire bonus used in the attack (not entirely realistic, but much simpler game-wise). Burst fire has the effect of lowering the weapon's total effective damage for the ammo fired because many rounds will simply not connect with the target. To conserve ammunition, the attacker may elect to use only part of the weapon's entire ROF rating. If the ROF rating is equal to zero (by choice or by design), only one round of ammunition is expended per firing.

Burst fire automatically pins infantry in place, whether it causes damage or not (see *Pinned!*, page 64).

MISSILE ROF

Unlike other weapons, rocket and missile launch systems do not expend ten rounds of ammunition per point of ROF bonus used in the attack. Instead, the number of rockets or missiles used doubles for every point of ROF that is applied to an attack. Thus, an attack with ROF +1 requires 2 missiles, ROF +2 requires 4 missiles, ROF +3 requires 8



missiles, ROF +4 requires 16 missiles, and so on, doubling every time. This reduction in ammunition cost both represents the increased effectiveness of rockets and acts as a counterpoint to their vulnerability to anti-missile devices.

WALKING FIRE

Weapons capable of burst fire can be used to attack multiple targets in a single action by walking the burst across the targets. Walking fire must be declared before any attacks are made. A number of targets equal to the weapon's ROF plus one may be attacked; the targets may not be more than 1 MU apart from one another and all must be within the weapon's firing arc. For each target, the weapon's ROF is reduced by one for damage purposes (but not for ammo expenditure). Each separate attack is rolled separately. Each individual target may not be attacked more than once per round by the same weapon (no extra attacks against one target).

SATURATION FIRE

A burst fire weapon can be used to saturate a zone with firepower and automatically attack anything entering it. The weapon is put on full automatic fire and ammunition is emptied liberally, filling the air with a virtual wall of projectiles. Every unit that is in the target area or enters it later in the combat turn suffers an attack automatically, regardless of speed, maneuver or allegiance.

To perform saturation fire, the attacker chooses a target point. He then rolls his attack normally except that half the weapon's ROF (rounded down) is added to his dice roll. The ROF is not used to increase the Damage Multiplier or Margin of Success of the attack. After rolling, the attacker records the total attack

roll. Any unit within a radius of (RoF x MU) of the target point, or that enters this zone later in the combat turn, must surpass this number or be damaged by the saturation fire. The damage is equal to the Margin of Failure times the Damage Multiplier of the weapon.

There are two limitations to this type of fire: the saturation target point cannot be further than the Medium range of the weapon, and the weapon uses 30 rounds of ammunition (or 8 rockets) per ROF point used in the attack. If the weapon does not have this much ammo left, the result still stands (although the ammo magazine is emptied). A least 10 rounds of ammunition (or 4 rockets) are required to saturate.

AREA EFFECT WEAPONS

Area effect weapons damage everything in their radius, irrespective of friend or foe. These weapons are rated in Area Effect (AE), followed by the radius (in MU) of the blast area. An AE of radius 0 means that only one MU around the target is affected (anything present in the radius must defend against the attack). A single attack roll is made, while each and every vehicle and squad (allies included) in the affected area roll their defense against this value separately. Even if the blast is completely defended against (e. g. Margin of Success equal to 0), any unit in the blast zone still takes half the explosion's Damage Multiplier in concussion damage.

Burst Fire Example

Smitty fires his machinegun at the enemy with his full ROF of +2, expending 20 rounds of ammunition. He hits with a Margin of Success of 2. His gun's Damage Multiplier is x3; since his ROF is 2, this now becomes $(3 + 2 =) 5$, for a total of 10 points of damage. Had he elected to use a ROF of 1, his total damage would have been $((3 + 1) \times 2 =) 8$. He would, however, have saved 10 rounds. Had he used his full ROF bonus of 2 against infantry, the bonus would have been applied directly to his Margin of Success, raising it to 4 and thereby causing $(3 \times 4 =) 12$ points of damage to the hapless infantry unit!

Walking Fire Example

A walker sprays rocket fire across three targets. Its rocket pod has a Rate of Fire of +4, so the gunner could choose to attack up to five targets (main target plus four others). Since he is attacking two extra target, his effective Rate of Fire for each individual attack is +2, two points of ROF having been expended to switch target. It still expends 16 rockets.

Saturation Fire Example

Smitty saturates an area using all of his gun's ROF of +2. His attack roll turns up a 5. Smitty adds 1 (half his ROF) to the total, bringing it to 6. Any unit presently within one MU of the target point, or that enters that area later in the turn, must immediately roll a defense test versus a Threshold of 6 (Smitty's attack roll). If the roll is failed, the defender is successfully attacked; his Margin of Failure is multiplied by the machinegun's Damage Multiplier of 3. It is a pity that Smitty is now out of ammo, the attack having cost him 60 rounds.

Area Effect Attack Example

An area effect weapon (AE1, DM x30) is fired at Tank Alpha (Armor 15/30/45). Both Alpha and Beta, one MU away, are affected since the blast is AE1. The attack roll is low, a mere 3. Alpha rolls a 6 and Beta a 3 (after modifiers), avoiding the attack. Still, both take 15 points of damage (half the weapon's Damage Multiplier) in shrapnel and concussion.



DAMAGE

The Armor rating of a vehicle represents the toughness of its best armored location. Aiming for the weaker points of the structure thus increases the chances of damaging the unit. A weapon's damage increases with the Margin of Success of its attack, since weapon damage is rated as a multiplier to the Margin of Success. Thus the better the marksman, the greater the damage.

$$\text{Total Damage} = \text{Margin of Success} \times \text{Damage Multiplier}$$

This final damage is compared to the Base Armor of the target vehicle. The following table, Damage versus Armor, lists the possible outcomes. Only the most severe effect applies. For example, if a vehicle suffers Heavy Damage because it took damage exceeding twice its Base Armor value, it does not suffer Light Damage even though it obviously took damage in excess of its Base Armor rating.

Regardless of the result of the dice roll or the modifier, the Margin of Success cannot be greater than six for the purpose of damage.

Damage vs Armor Table

Damage to Armor	Outcome	What to Do
Damage < than Δ	No Effect	Nothing; hit bounces off
Damage ≥ to Δ but lower than 2 x Δ	Light Damage	-1 to Armor Rating; roll on Systems Damage Table
Damage ≥ to 2 x Δ but lower than 3 x Δ	Heavy Damage	-2 to Armor Rating; roll on Systems Damage Table
Damage ≥ to 3 x Δ	Overkill	Vehicle Destroyed

Δ = Vehicle Base Armor

Vehicle Damage Example (Damage to Armor)

A German Valkurie fires a PAR 24 (rocket bazooka) at an American Sherman. The Valkurie's modified attack roll is 7. The Sherman's modified defense roll is 4. The Valkurie hits with a Margin of Success of 3. The bazooka has a Damage Multiplier of 13, his total damage is (3 x 20 =) 39. The Sherman has a base Armor score of 14. Since 39 is over double that value but not triple it, the tank takes Heavy Damage. A roll on the Systems Damage table produces a 2: Structural Damage. This requires a further roll on the Structural Damage Subtable. The die roll is a 4; 1 is added to the result, as directed in the previous table. This brings the total to 5: Power Transfer Failure/No Movement. The Sherman can no longer move because of extensive damage to its treads and gearboxes.

SYSTEMS DAMAGE

The attacker rolls 1d6 to find the location of the hit. When multiple possibilities exist for exactly which vehicle component is damaged, such as when a weapon is damaged, a single die is rolled. If the result is an odd number, the defender chooses which system is damaged. If the result is an even number, the attacker chooses which system is damaged.

If a 6 is rolled on the table, a "cascade result" occurs: multiple systems fail, bullets ricochet inside the hull, etc. The attacker may immediately roll twice on the System Damage table. If any of these new rolls produce a 6 again, it also generates two new rolls and so on until only damage results have been rolled.

If the damage table indicates damage to a system that is not present on the vehicle (or that has already been totaled), the vehicle takes no further damage beyond the loss of Armor points (see further). A vehicle is not removed from play until it is either down to zero Armor points, it receives damage in excess of three times its Armor in a single attack, or the System Damage table result indicates that it is destroyed.

DAMAGE TO ARMOR

Armor loses its effectiveness when damaged due to cracking and structural fatigue. Bits and parts may fall off, or chinks may develop through which the next attack will reach a vital system or component inside, hastening the vehicle's demise.

When a vehicle suffers Light Damage, it loses 1 point of Base Armor permanently in addition to the effect outlined in the System Damage Table. Heavy Damage causes a vehicle to lose 2 points of Base Armor permanently, in

addition to the system damage. Each point of Base Armor that is lost reduces the amount needed to inflict Heavy Damage by 2 and the amount need to produce Overkill by 3.

Even if the vehicle has specialized armor-related Perks (such as Reinforced Armor), damage is always taken off the Base Armor rating. This is mostly done to simplify bookkeeping and keep the game moving along.

FIRE CONTROL

Fire Control is a catch-all category that represents the vehicle's targeting devices, acquisition gear and its weaponry. If more than one weapon system is present, all damage received is randomized following the procedure outlined on the previous page.

The damage penalties are applied to the affected weapon's Accuracy. If a weapon's cumulative penalties ever reach a total of -5, the weapon is put out of commission and cannot be used anymore. If the penalties drop to -6 or lower, the weapon is completely destroyed and blown off the hull.

If a vehicle's Fire Control is utterly destroyed, the vehicle may still attack but it suffers a -5 modifier.

STRUCTURE

Structure hits damage the vehicle's frame and structural integrity. The hull and other components are twisted out of shape or ripped apart, causing further damage to the mechanisms within. Most Structure hits are fairly straightforward: loss of Movement Points are applied to one Movement Type, while Maneuver losses affect the vehicle as a whole.

Systems Damage Table: Light Damage

Roll	Damaged System	Result
1	Fire Control	Roll on Subtable A
2	Structure	Roll on Subtable B
3	Crew	Crew stunned (-1 action for 1 turn)
4	Movement	-1 MP
5	Auxiliary Systems	-1 to 1d6 Auxiliary Systems
6	Roll Twice on this table*	-

* If the attack was a called shot, the attacker hits his target location (as effects 1 to 5 on table, depending on target).

Systems Damage Table: Heavy Damage

Roll	Damaged System	Result
1	Fire Control	Roll on Subtable A and add +1
2	Structure	Roll on Subtable B and add +1
3	Crew	10% casualties, min. 1
4	Movement	1/2 remaining MP (round down) & -2 Maneuver
5	Auxiliary Systems	1d6 Auxiliary System destroyed
6	Roll Twice on this table*	-

* If the attack was a called shot, the attacker hits his target location (as effects 1 to 5 on table, depending on target).

Subtable A: Fire Control Damage

Die Roll	Effect
1	-1 Accuracy to a single Weapon
2	-2 Accuracy to a single Weapon
3	-1 Accuracy to all Weapons
4	Single Weapon destroyed
5	Fire Control system destroyed (-5 to all attacks)
6	Roll Twice on this table
7	Ammunition/Fuel Hit (roll 1d6)
1-3	Ammo Storage and Fuel Tank Ruptured (vehicle cannot move or fire weapons)
4-6	Chain Reaction! Ammo and Fuel Explodes! (Vehicle Destroyed and all Crew Killed)

Subtable B: Structural Damage

Die Roll	Effect
1	-1 MP
2	1/2 remaining MPs (round down)
3	-1 to Maneuver
4	-2 to Maneuver
5	Power Transfer Failure; no movement
6	Catastrophic crew compartment failure, 75% casualties, min. 1
7	Complete structural failure; vehicle is destroyed; crew survives.



Power Transfer Failure hits destroy the vehicle's transmission, effectively putting all movement systems out of service. It is still possible to fire weaponry, though. Catastrophic Crew Compartment Failure is just that: the vehicle's structure collapses, trapping the crew between the very armor plates that were supposed to protect them. The Reinforced Crew Compartment Perk is ineffective against this, but the Reinforced Structure Perk will absorb the hit as normal.

CREW

"Crew Stunned" results mean one action is lost. If the actions were already taken that turn, the lost actions carry over to the following turn(s). Command points may be used to pay the action debt. A "Stunned" chit can be placed on the game sheet as a reminder of action owed.

The Crew result on the System Damage Table is also used to determine damage among the vehicle's passengers, if any are aboard. The usual damage allocation method (see page 58) is used to determine whether the crew or the passengers take the hit. Damage is then applied as normal. Passengers cannot replace lost crew, though allowances can be made for this in a scenario.

MOVEMENT

Any penalty to the speed of the vehicle is applied to all of its Top Speeds; the Combat Speed is then recalculated by dividing the Top Speed Movement Point allowance by two, rounding up. If all Movement Systems are totaled, either through successive minuses (maximum -5) or a Heavy Damage result, the vehicle's defense rolls are equal to zero from now on.

AUXILIARY SYSTEMS

Auxiliary Systems (AUX) include Sensors, Communications and any Perks that are labeled as Auxiliary Systems (e.g. life support, ejection seats). If any turreted weapon is present, the turret is counted as an Auxiliary System and may be disabled like the rest (though turrets are not affected by "-1" results). A disabled turret is frozen in place and any weapon mounted in it becomes fixed in the arc where it was last fired.

If a vehicle's Sensors or Communications system are destroyed, the vehicle may not perform any action that requires these systems, such as Active Sensor LOS or forward observing.

Damaged AUX Perks have a -1 to any roll involving those particular systems (for example, -1 on any Sensor roll with

Aquatic Sensors), or a 20% loss in efficiency (on systems like mining equipment). If a system's cumulative penalties reach -5 (100% efficiency loss), it is considered destroyed.

DAMAGE TO ARMS

Arms (whether of the Battle, Tool or Manipulator type) are normally part of the vehicle's basic chassis but are considered weapons for damage purposes. If no other weapon system is carried by the machine, arms are automatically affected on "Weapon" hits. If other weapon systems are present, the damage is randomized following the usual procedure.

Penalties caused by damage are applied equally to all functions of the arm: punching, manipulation, etc. If an arm's

System Damage Example

In the middle of a furious firefight, Walker Theta is hit by a light cannon (x8). The MoS is equal to 4. The 32 points of the attack cause a Heavy Damage result. Rolling one die, we get a 1 (Fire Control). Rolling on Subtable A, we get a 3, plus 1 for Heavy Damage. The result is "Single Weapon Destroyed." Walker Theta's Player must now roll 1d6 to determine which weapon is destroyed. The result (a "5") indicates that he can choose which one he loses, probably the smaller one. Had the number been even, his opponent would have made that choice for him.

Armor Loss Example

A Soviet G-27 heavy walker has 9 points of base armor (9/18/27). It receives 12 points of damage, enough to cause Light damage. The armor thus drops by one point and becomes (8/16/24). It then receives 17 points of damage. Normally, this would cause Light damage, but because of the previous hit lowering the armor, it now causes Heavy damage. The armor drops by two points, becoming (6/12/18). Any future hit of 18 points or more will kill the walker.

Sub-system Damage Example

A defender might receive a "-1 to Single Weapon" damage effect. If this defender has more than one weapon, a die is rolled. If the number is odd, the defender will probably choose to penalize his most feeble weapon. If the number is even, the attacker will most likely opt to damage the defender's main weapon. The penalty is then applied to the Accuracy of the weapon chosen.

cumulative penalties reach a total of -5, the arm is put out of commission and cannot be used anymore. If the penalties drop to -6 or lower, the arm is completely destroyed and blown off the hull.

• CREW ESCAPE

Unless specifically mentioned, the crew of a destroyed vehicle is not necessarily dead, but they are unconscious, wounded or otherwise unable to keep on fighting and thus takes no further part in the scenario.

When a vehicle is destroyed, there is a slim chance that the crew will escape. Roll one die per crewman; a roll of "6" means they escaped the destruction of their vehicle. Surviving crewmembers form a small infantry unit of their own (see *Infantry*), equipped with pistols. Unless the scenario has a High Priority (see *Mission Priorities*, page 71), in which case the crew keeps on fighting, it will attempt to exit the battlefield through a friendly table edge.

For example, a Sherman tank is hit and destroyed by an Overkill result. As the tank goes up in flames, the owning player rolls a die for each of the five crewmen, rolling a 6, 4, 1, 2, 5. In this case, only one crewman manages to scramble out of a hatch and escapes with his life! Understandably rattled, he tries to make it back on foot to the Allied lines, clutching his trusty Colt pistol.

INFANTRY

Machines are expensive and require maintenance, but humans need only food and motivation to participate in a battle. Moreover, while armored vehicles can *take* territory, only infantry can actually *hold* it. Consequently, foot soldiers form a large percentage of the fighting forces. The infantry platoons of most armies are divided into squads of about ten men each, with an additional squad half that size to serve as the platoon's overall field command unit. Most infantry deploy on foot, but some use motorcycles, horses and even rocket packs to move around on the battlefield.



• INFANTRY RECORD SHEET

Each infantry squad has an appropriate record sheet that details the necessary statistics for game play. These sheets are used to tally the damage and record other important information.

The name of the infantry squad should be entered on the top of the sheet. Naming a squad can be as elaborate as listing the unit's regiment, battalion, company, platoon and squad designation or as simple as a number (i. e. squad #1).

SQUAD DAMAGE TRACK

The infantry sheet is composed of a table of three columns and as many rows as there are soldiers. The first column (#) lists the members numerically. Circle one of these numbers to indicate the squad leader. If he is killed, the

squad's leadership Skill rating drops to 1 (all other Skill rolls are unchanged). It is these trooper numbers that the Infantry Hit Location table (see page 64) refers to.

The second column is the Weapon column. It shows the type of weapon each trooper carries. The third column is composed of boxes or dots, each representing one damage point. Each trooper can take a number of damage points equal to his Stamina plus his personal armor (if any is worn). Flak vests add one damage point, heavy vests add two, and the rare full armor suits add three (but reduce the squad's MPs by one). Cross out the extra boxes for each trooper. When the infantry squad takes damage, cross out one of these boxes for each point of damage the unit takes.



QUALITY

There are five levels of infantry quality (see *Infantry Quality* table). The level of quality determines the stamina and Skill of the squad's members. Stamina is a measure of how much physical punishment each trooper can endure. Unlike vehicle crews, infantry are assigned one generic Infantry Skill to keep the game simple. This Skill serves for attack, defense and other action tests.

WEAPONS

Infantry units can carry both standard and heavy weapons. Standard weapons are usually some form of rifle. A few troopers (usually two) in a squad sometimes carry a heavy weapon to deal with tougher opponents. Refer to the *Infantry Weapons* table to obtain the statistics of particular weapons.

The infantry squad record sheet has no place to record ammunition. This is intentional: infantry squads are assumed to carry enough ammunition to last them through a battle. While this is not always true in real life, it does dramatically reduce the paperwork.

RADIOS

Depending on a particular scenario or army list, each squad may be equipped with a radio. The radio is carried by one soldier, which must be marked on the squad record sheet.

A squad without a radio may communicate with friendly units up to one MU away — they are literally shouting to each other! Being equipped with a radio allows the squad to communicate with other vehicles and squads who may also have radios. Squads with radios may also be used for spotting or calling down artillery if they are designated as artillery spotters.

MOVEMENT

Infantry squads on foot receive 2 Movement Points per turn. Infantry units do not have Top Speeds, and always move at Combat Speed. They use the Walker terrain movement costs, but it never costs infantry more than 2 MPs to travel through one MU (in short, they can always move at least one MU per turn).

There is one exception to this, however: elevation changes. While the squads are assumed to be equipped with climbing

gear, they can only go down cliffs, not up — climbing is too time-consuming for a combat environment.

Some specialized infantry squads have modes of transportation other than walking. Infantry mounted on motorbikes (with or without sidecars) have 6 MP and are treated as using Ground movement while on their bikes. They cannot carry heavy weapons unless they are equipped with sidecars, which links two troopers together for damage purposes.

Infantry Quality

Quality Level	Stamina	Skill
Rookie	3	1
Qualified	3	2
Veteran	4	3
Elite	4	4
Legendary	5	5

Infantry Weapons

Weapons	Accuracy	Damage	Range	ROF	Notes
Pistol	0	x1	0	0	-
Rifle	0	x2	1/2/4/8	0	-
SMG	0	x1	1/2/4/8	0	-
Light MG	0	x2	1/2/4/8	2	-
Medium MG	0	x3	1/2/4/8	2	-
Heavy MG*	0	x4	1/2/4/8	1	-
Panzerschreck	0	x9	0/1/2/4	0	HEAT (1943-)
Panzerfaust	-1	x10	0/0/1/2	0	HEAT (Late 1943)
PIAT	0	x8	0/0/1/2	0	HEAT (1942-)
RPG-43	-1	x7	0/0/0/0	0	HEAT
Anti-Tank Rifle*	+1	x5	1/2/4/8	0	-
US M-1 Bazooka*	0	x8	1/2/4/8	0	HEAT (1942-)
Light Mortar*	0	x4	1/2/4/8	0	IF, AI, MR1
Heavy Mortar*	0	x6	2/4/8/16	0	IF, AI, MR2, AEO

*Heavy Weapon; 1 action to set up before use

Infantry Squad Examples

A British squad of paratroopers is a Veteran squad (Stamina 4). The player chooses trooper number 4 as his leader and circles his number in the first column. He chooses troopers 2 and 8 as his heavy weapons specialists and writes their weapons in the second column. The other eight squadmembers, including the leader, have rifles. Lastly, the player crosses out all but four damage point boxes for each trooper.



Troops can also be mounted on horses. Horse units count as having 4 MP, and are treated as using Walker movement while on horseback.

Primitive personal rocket packs are available to both Axis and Allied troops. While they allow true flight for short periods of time, the packs are better used to "bounce" across the landscape to allow the use of cover. They give the infantry a Movement of 3 MPs which ignores the terrain below. If the landing zone is a Dangerous Terrain, the infantry must test as normal (see page 50).

A squad can take off instead of moving: it is removed from the table as it climbs to the sky. While it is there, no one can attack it, and it cannot attack. It may come back on the table on any subsequent turn, landing anywhere it chooses. Any unit with a Line of Sight to the landing site and within range may make one free attack against the squad as it come down, however (all the usual modifiers apply: 0 for Move, -2 for being infantry).

• INFANTRY ACTIONS

Infantry units have one action per squad, which is normally used to attack. When an infantry unit goes on the offensive, it gets one attack per gun type at the cost of a single action. All attack rolls are made with the unit's Infantry Skill (with any applicable modifiers). Weapons of the same type must attack the same target.

If two or more troopers are using the same weapon type, the value listed in the *Infantry ROF Bonus* table on the next page is added to their weapon's basic Rate of Fire. Infantry weapon ROF otherwise works as for vehicles (see *Burst Fire*, page 56), with the same options. Infantry units can use their weapons' ROF for burst fire, walking fire or even saturation fire.

• ATTACKS VS. INFANTRY

Due to their small sizes, dispersed formation and uncanny ability to take advantage of any available cover, infantry do not suffer any defense modifiers for their slow movement: their movement modifier is always 0. In addition, a -2 penalty modifier is applied to any unit other than infantry squads attempting to target them.

Some vehicles are equipped with anti-infantry weapons, which ignore the -2 modifier due to their targeting systems or method of attack. These weapons are marked with the letters "AI" (for "Anti-Infantry") in their description.

• APPLYING DAMAGE TO INFANTRY

If an infantry squad is hit, the total damage points caused by the attack are calculated normally. The exceptions to this rule are burst fire weapons, which add their ROF bonus to their Margin of

Success instead of to the Damage Multiplier when using burst fire (see page 56 for the full rules).

Damage points are applied differently. They are not compared to an Armor rating; infantry units do not suffer damage like vehicles. Instead, each point of damage is removed from the squad on a one-to-one basis. When the squad takes damage, the attacker rolls one die using the *Infantry Hit Location Table* to see where in the unit the attack hit.

The table indicates which trooper is the first one to take damage. If the trooper runs out of damage points, he is considered a casualty and the remaining damage points are applied to the next trooper either up or down the list (depending on the die result), and so on. If damage remains to be allotted up past trooper #1 or down past the last trooper, the damage loops around to the other end of the squad's damage track.

Infantry ROF Bonus (Infantry Actions)

Min. Number of Troopers w/Weapon	ROF bonus
1	0
2	+1
4	+2
8	+3

Infantry Attack Examples (Infantry Actions)

Infantry squad Alpha has nine members, six of which are armed with 9 mm submachineguns (SMGs) while the remaining three carry bolt action rifles. One attack will be made with the SMGs and another with the rifles. If the SMGs succeed, they cause a x3 attack (x1, +2 ROF bonus), while the rifles are at x3 (x2 +1 ROF bonus).

The same squad has taken some casualties later in the game. Only two troopers with SMGs remain. They attack, gaining a measly +1 bonus because there are only two of them firing. They elect to put the point of ROF (from the SMGs) into boosting the damage. The result is one DM x2 attack.



INFANTRY CASUALTIES

A trooper is not considered to be a casualty until his entire damage track is crossed out. The debilitating effects of minor injuries are ignored for convenience — the troopers are equipped with emergency first aid packs with stimulants, and some of the damage points represent fatigue and shell shock instead of actual physical wounds. As with vehicle crew casualties, a trooper with zero points remaining is not necessarily dead, but he is unconscious, wounded or otherwise unable to keep on fighting and thus takes no further part in the scenario.

The ROF bonuses from mass attacks with infantry weapons is reduced if casualties occur. If the number of squad members with a particular weapon drop below the 2, 4, or 8-member levels (see table at the bottom of page 63), the squad loses the associated ROF bonus.

AREA EFFECT WEAPONS VERSUS INFANTRY

Infantry units are very vulnerable to area effect weapons designed to be used against them. These weapons typically bounce right up before exploding and showering the landscape under them with thousands of sharp fragments moving extremely fast. This negates most of the cover that is available to infantry units and cause devastating injuries. The anti-personnel grenade launchers mounted on walkers and tanks after 1943 work on the above principle, releasing dozens of micro-bomblets above their targets.

When a weapon with both the Anti-Infantry and Area Effect characteristics hits an infantry unit, the damage is inflicted upon each trooper in the area of effect instead of working its way through the squad.

• PINNED!

Infantry units that are attacked generally keep their heads down. To represent this, infantry units that are hit but not damaged (MoS of the attack = 0) receive a "Pinned!" counter. If the infantry unit is hit and take damage, it receives two "Pinned!" counters.

Pinned units may not move and receive a -1 modifier per counter to all their actions. The Leader of the unit must spend an action and pass a Leadership test versus a Threshold equal to (6 - the Skill level of the unit) to remove one counter.

INFANTRY THREAT VALUE

Infantry squads are easy to generate. Choose the Skill rating, armor, equipment and weapons, then calculate the squad's Threat Value according to the following procedure.

The Threat Value of each individual infantryman is first figured out. Square the total damage points of the trooper and

then multiply it by the Damage Multiplier of the weapon the trooper is carrying. Then take the square root of this number, rounding up to the nearest whole value. This is the trooper's Threat Value, or a general measure of his combat effectiveness.

The individual Threat Rating of all infantrymen is added up, then modified according to their Skill level (see the table below). Infantry squads equipped with horses, jetpacks or bikes double their final Threat Value.

Infantry Hit Location (Applying Damage to Infantry)

Die Roll	Start at Trooper #	Direction
1	1	down
2	3	down
3	5	down
4	6	up
5	8	up
6	10	up

Infantry Damage Example (Applying Damage to Infantry)

Infantry squad Bravo has two heavy weapons troopers, #3 and #8. The leader is #9. Each trooper has 6 damage points. An autocannon burst chews into squad Bravo for 32 points of damage. A roll on the Infantry Hit Location table turns up a 3. #5 is the first in line for damage and the damage will work its way down the damage track. The first 6 points drop #5. The next 6 points drop #6. The 6 points after that make #7 a casualty. The fourth 6-point group eliminates #8, the heavy gunner. The fifth 6-point group drops #9, the squad leader. #10 takes 2 points of damage but is still up and functional. The unit is now down to one heavy gunner (massed attack ROF bonus drops from +1 to 0) and 4 standard weapon troopers (massed attack ROF bonus drops from +3 to +2). In addition, the unit is now leaderless (Leadership Skill of unit drops to 1) and pinned!

ADVANCED RULES

Although they bring additional complexity, these rules will help resolve the special situations that always seem to crop up in a game. The use of any rule in this section is completely optional and all players must agree to use them before the game starts.



• AQUATIC MOVEMENT

Amphibious vehicles (ground vehicles and walkers with the Amphibious Perk) are able to travel in water terrain. Amphibious vehicles pay the Water MP cost for their movement type (2 for walkers, 3 for ground vehicles).

Boats and submarines are able to travel in water terrain at the cost of 1 MP per MU. Some scenarios may impose weather conditions that make water more treacherous; in a storm, for example, each MU of water could require 2 or even 3 MPs to cross.

• CLIFFS

Any terrain with a slope of more than 45 degrees is considered to be a cliff. Vehicles may not normally ascend or descend cliffs; walkers with arms are the only exception. Infantry may climb or

descend cliffs at normal costs for elevation changes; this is a special exception to normal infantry climbing restrictions.

If a walker has arms that can lift a vehicle of its own size, it can climb up or down a cliff face. The walker must pass a Driving test with a Threshold of 5. The walker ascends or descends the cliff face at a rate of 1 MU per combat turn. If the walker fails the test, it does not move this turn. If it fumbles the Driving test, it falls, taking a number of damage points equal to (Size x 2d6). Climbing consumes a vehicle's entire MP allotment and is considered to be equal to expending the vehicle's entire Combat Speed MPs.

Climbing walkers and infantry are in poor defensive positions and suffer a -2 modifier on all defense rolls.

• THROWING

Some units are capable of throwing objects, such as rocks, grenades or even other units! At least one punch-capable arm is required for throwing. It may not be used for another function in the same turn.

The base throwing range (in meters) of the arm is equal to twice its rating. This total is reduced by the Size of the object being thrown (for comparison purposes, a single infantryman is Size 1) or used as a weapon, which is subtracted from the throwing arm's rating before doubling it. If the object being thrown is larger than half the Size of the throwing vehicle, half the rating of another arm can be added to the effort.

The base range calculated above is doubled for each additional range band, as for any other weapon. When an object is thrown, a Gunnery Skill roll, modified as normal for range and movement, is made. If the modified die roll is equal to or higher than the defense roll, the object thrown lands right on target. If the dice roll is failed, the shot will deviate from its intended destination by a number of meters equal to twice the Margin of Failure. One die is rolled for the direction of the deviation (see template on page 73).

If the attack roll was Fumbled, the shot deviates as normal, but toward the throwing unit. Sometimes, a Fumble or an ordinary miss will land a projectile right on top of another unit anyway. The attack is resolved as normal if the defense roll of the new target is failed.

Units that get thrown fall, taking a number of damage points equal to (Size x 2d6).



• WALKER KNOCKDOWN

Whenever a vehicle using the Walker movement mode takes large amounts of damage, it may fall down from the force of the impact. If the total damage received in one attack is equal to or higher than twice the Size of the vehicle, the pilot must pass a Driving Skill test against a Threshold equal to one plus the Margin of Success of the attack that hit it. If the walker fails the test, it falls down, taking Light Damage. If the walker fumbles the test, it falls down, taking Heavy Damage. Walkers must spend one MP to stand before they can start moving again.

• WEATHER CONDITIONS

Certain weather conditions complicate tactical combat. The following text describes the game effects for just a few common weather conditions. Specific rules will be found for local weather in each of the Theater Books.

Most weather conditions affect visibility, making it more difficult to acquire a target. Some may modify the Dangerous Terrain tests as well.

BLIZZARDS

These cold winter storms are common in the steppes of Russia and Northern Europe. The swirling snow obscures both visibility and sensors alike. If both players agree that a blizzard is occurring during their combat, add +1 to the Obscurement value of every MU of terrain. This translates to a -1 modifier per MU of intervening terrain on all attacks.

Blizzards also make footing treacherous in some areas. A +1 modifier is applied to the Threshold of all Snow Dangerous Terrain Test (treat Snow as either Rough, Sand or Swamp terrain, depending on how packed or icy it is).

In addition to the above, vehicles that lack the Hostile Environment Protection: Extreme Cold Perk must spend one additional MP per MU of terrain moved.

EXTREME TEMPERATURES

Extreme cold (-40° C or lower) or extreme heat (+50° C or higher) is very detrimental to the functioning of vehicles. Any vehicle that lacks the appropriate Hostile Environment Protection Perk automatically suffers Light Damage whenever pushed to Top Speed.

In addition, such vehicles must roll one die at the beginning of each combat turn. On a roll of one, the vehicle breaks down for a number of turns equal to the roll of one die.

Infantry cannot properly function in extreme temperatures unless they have special gear to protect them. When so equipped, infantry function normally. Unless so noted, infantry are automatically equipped at no cost in a special environment scenario.

NIGHT

Nighttime combat functions as daytime combat except that the Night Detection score of a vehicle is used instead of its Daytime Detection score (see page 52). Infantry and vehicles without sensors will only move at half speed and have a -1 modifier applied to all attacks.

Some units are equipped with powerful searchlights (see *Perks*, page 97). These can be turned on or off at the beginning of each turn. Active searchlights make the vehicle easier to spot: the vehicle is treated as being in daylight for all combatants. Enemy fire can target the searchlight by performing an aimed shot; if successful, the searchlight is automatically taken out.

RAIN

Rain, in addition to making the troopers miserable and soaking wet, also affects visibility and terrain.

Light Rain adds +1 to the Obscurement value of every MU of terrain. This translates to a -1 modifier per MU of intervening terrain on all attacks.

Heavy Rain is a full-fledged storm; it adds +2 to the Obscurement value of every MU of terrain. This translates to a -2 modifier per MU of intervening terrain on all attacks. In addition, it turns the soil into thick mud, making it more difficult to progress. A +1 modifier is applied to the Threshold of all Dangerous Terrain tests.

SANDSTORMS

Sandstorms are common in desert locales. These turbulent dustclouds obscure both visibility and sensors alike. If both players agree that a sandstorm is occurring during their combat, add +1 to the Obscurement value of every MU of terrain. This translates to a -1 modifier per MU of intervening terrain on all attacks.

Sandstorms also cause fine dust and sand to shift, making footing treacherous in some areas. During a sandstorm, a +1 modifier is applied to the Threshold of all Sand or Dust Dangerous Terrain Test.



• INCENDIARY EFFECTS

Incendiary weapons can decimate enemy troops. When an incendiary weapon hits a vehicle, the damage is equal to the weapon's Damage Multiplier (called its Intensity) plus the Margin of Success. While this may seem like less damage than most weapons, most incendiary weapons are labeled as Slow-Burn weapons. Slow-burn weapons cause the same amount of damage for a number of turns equal to the Margin of Success. Consequently, if a slow-burn weapon with an Intensity score of 12 hits a target with a Margin of Success of 3, it would do 15 points of damage to the target for three turns.

Incendiary weapons are most effective versus infantry. Against infantry, the Margin of Success is added to the Intensity and then multiplied by the Margin of Success to obtain their damage. Slow-burn weapons apply their later turns of damage to the unit only if it remains in the same hex.

Incendiary weapons can be used to start fires. To ignite a one-MU wide area, a total of 100 points of Intensity must be fired into it. No attack roll is necessary. Once the area is ignited, it is considered to be a fire of Intensity 10. At the end of every game turn thereafter, its flame intensity is increased by (1d6-3) until it either reaches 20 or goes out. If it reaches 20, the burning zone grows by one MU and goes back to Intensity 10. A spare die is useful to keep track of this (red ones do nicely); cotton is useful to mark the boundaries of the fire.

Unless the battle drags on for hours, wind will have little effect on the spread of the fire. If such an effect is desired nonetheless, randomly determine the direction of wind before the game, then spread fire only downwind.

Vehicles crossing a burning area must pass a Driving Skill test versus a Threshold equal to one-half of the fire's Intensity to pass safely. If the vehicle fails the roll, treat the result as a successful incendiary attack on the vehicle with a Margin of Success equal to the margin of failure of the Driving Skill test. Treat fumbles as if the incendiary attack Margin of Success were equal to the test Threshold. Infantry units that enter a burning area are automatically destroyed.

Only woods and jungle terrain can be ignited. Alternatively, the Players may agree that the Rough and Clear terrain on the table is dry grassland or scrub and allow it to be ignited. Sand, Swamp and Water terrain cannot ignite. A scenario might cover them with oil or a similar flammable substance and thus allow these terrains to be ignited, but they normally cannot burn.

Burning areas produce smoke in an irregular fashion. Roll one die per fire to know how much Obscurement the smoke from that fire causes: 1-2, no Obscurement; 3-4, Obscurement 1; 5-6, Obscurement 2. The smoke causes Obscurement above the ignited terrain as well.

Incendiary Attack Example

A U.S. Marine Longstreet attacks a Japanese tank with a flamethrower (Slow Burn). The attack succeeds with a Margin of Success of 3. The weapon has an Intensity rating of 12 (the substitute for the Damage Multiplier). This attack will do 15 points of damage to the tank for three turns. The first turn's damage is allocated immediately. In later turns, the damage is allocated during the Miscellaneous Events phase.

The same Longstreet with the flamethrower attacks an infantry squad. The attack succeeds with a Margin of Success of 2. This attack will inflict $(12 + 2) \times 2 = 28$ points of damage to the infantry squad per turn for two turns!

The Longstreet attempts to ignite a jungle patch using the same weapon. It must attack the MU at least twice ($12 \times$ maximum MoS of 6 = 72) to amass the 100 points of Intensity required to ignite it.

• HULL-DOWN POSITIONS □

"Hull-down" refers to a classic battlefield position where only the turret of an armored vehicle is exposed to enemy fire, the hull itself being protected by an obstacle such as a ridge or a low wall. This drastically reduces the chances of being hit while not impeding the attacker's own fire. Obviously, other vehicle types can also use hull-down positions, including walkers — they simply squat or lie down behind cover.

Because of the large ground scale of the game, it is not always possible to place a unit precisely behind a ridge or other land feature since these are not readily apparent. Instead, a somewhat abstract system is used: by spending MPs, a vehicle can entrench itself behind hard cover almost anywhere. It is assumed that there are suitable terrain features nearby for such a move. The MP cost (which is listed in the *Hull-Down Table*) represents the fact that the unit must move out of its way, find suitable cover, slow down and otherwise park itself into the hull-down position. Some terrain types offer less protection than others, and this is reflected in the MP cost — it is always easier and faster to find a suitable defensive position in broken terrain or in a city than on open ground.



The Hull-Down Table lists the various costs and protection factors assigned to each terrain type. The Covers column indicates the systems that are hidden behind the obstacle when the vehicle is in the hull-down position with weapons at the ready (the numbers listed in the table refer to the die roll numbers on the System Damage table, page 59). If a commander prefers, his vehicle can be completely hidden, covering all locations, but rendering all weapons useless save for those capable of indirect fire.

Rather than applying a modifier to hit the now smaller silhouette of the vehicle, the attack is rolled normally; if a hidden system is rolled on the System Damage Table, the obstacle absorbs part of the damage first. The Protection column gives the amount of damage points subtracted from the attack if it hits the cover instead of the vehicle. If the damage is reduced to zero, there is no further effect on the target vehicle. To prevent unnecessary bookkeeping, the protection afforded by the cover remains constant and does not ablate under fire. Aimed attacks are not possible against hull-down vehicles.

Infantry are always assumed to take defensive positions, hence the natural -2 modifier on all attacks against them. An infantry squad wishing to go "hull-down" is actually digging in, using shovels and other tools to improve their defensive positions. This takes time, represented by the MP cost of the Hull-Down procedure. Since infantry have only 2 MPs, they will require one or two turns to dig in, during which they cannot do anything. Once this is done, the infantry are considered dug in (place a Hull Down counter nearby as a reminder), and benefit from the Protection listed in the table at right. The squad will need to pass an unmodified Morale test to leave this position.

• STRUCTURES

Many man-made objects can be found on battlefields. The players should agree on what human structures are on the mapboard, if any. Man-made objects can be destroyed in the course of battle. Man-made structures take damage in a manner similar to infantry: each structure has an ablative Damage Point Capacity rather than Armor. If it takes more damage than its DPC, the structure is destroyed and replaced by Rubble terrain. Burst fire weapons affect structures in the same manner as they do infantry.

BRIDGES

Bridges span narrow bodies of water, such as rivers and straits, or chasms, such as canyons and gullies. The bridges presented here can be the large ironworks found over prominent terrain features or the small ten or twenty-meter bridges found in the city or on campaign roads — they just have different DPCs.

Movement across bridges has the same MP cost as Clear terrain, unless a road has been built on the bridge (see *Roads*, page 69). Each MU of a bridge is rated by two attributes: Damage Point Capacity and Size Capacity. The average DPC of a bridge is 100 points per section.

The Size Capacity of a bridge section is the maximum Size of vehicle that this bridge can safely support. If a vehicle of larger Size attempts to cross the bridge, roll one die. If the die roll is equal to or less than the difference between the vehicle's Size and the bridge's Size Capacity, the bridge loses one tenth of its original Damage Point Capacity per point of Size difference (see example next page). Repeat the die roll until the bridge section either does not take damage (at which point, stop rolling) or breaks under the strain and collapses. If a vehicle is six or more Size points greater than the bridge's Capacity, the bridge section will automatically and immediately collapse.

If a bridge section collapses, adjoining sections have a 50% chance of collapsing as well. Roll one die for each adjacent section: if the result is 3 or less, the adjoining section collapses. All vehicles upon a collapsing bridge take (Size x 2d6) points of damage. The bridge terrain is transformed into Rubble afterward, unless it is over water — it then becomes Swamp terrain (this only represents the presence of debris in the shallow water, not a sudden growth of vegetation!). A bridge collapsing above deep water leaves no debris.

☐ Hull-Down Table

Terrain Type	MP Cost	Covers	Protection
Clear	+3*	n/a	10*
Rough, Rubble	+2	2 to 4	15
Sand, Dust	+3	3 to 4	10
Woods	+2	2 to 4	15
Jungle	+1	2 to 6	20
Swamp	+1	2 to 6	10
Urban	+2	2 to 6	15
Dense Urban	+1	2 to 6	20
Slope**	+1	2 to 6	15

*Only infantry can go hull-down in Clear terrain.

**It is assumed that the vehicle is located at the edge of the elevation level.



ROADS

Roads are designed to make travel easier for vehicles by providing them with an ideal travel surface. Roads have a 100 Damage Point Capacity per MU. Any ground vehicle traveling on a road gains an additional number of MP equal to half of its current speed (Combat or Top) rounded down to the nearest whole number. These free MPs must be expended on movement along the road or they are wasted. All units pay the MP cost of Clear terrain instead of whatever terrain the road crosses.

Roads can be built over bridges. These roads use the bridge's Damage Point Capacity but still confer the movement bonus to vehicles.

URBAN TERRAIN

Terrain that contains structures is called Urban terrain; it is generally easy to move through, and is thus treated as Clear for movement purposes. It causes two points of Obscurement per MU and offers excellent cover (see *Hull Down*, page 67). The Damage Point Capacity of the average building is 80, assuming generic structures. Reinforced buildings have a Damage Point Capacity of 100 per building or more, depending on the scenario. Once a building has lost its entire DPC, it is replaced with Rubble terrain.

House-sized buildings count as immobile Size 6 units for ramming purposes; larger buildings count as Size 12 units. Since they do not move, their Defense roll is always zero.

Urban terrain is assumed to have streets, but does not give the road movement bonus due to minor obstructions (rubble piles, pedestrians, parked vehicles, etc.). Major streets are represented by roads crossing urban terrain.

• TOWING CAPACITY

It is assumed that all units have cables and tow hooks for simplicity. A vehicle's maximum towing capacity (in Size points) is equal to the vehicle's own Size. This assumes that the towed item is designed to be towed (e.g. a trailer). Items that were not designed to be towed, such as disabled walkers, are considered to have double their normal Size for towing purposes.

Vehicles can tow up to half their maximum towing capacity without a reduction in speed. Vehicles towing between half and three-fourths of their capacity are limited to Combat Speed; loads from three-fourths to full towing capacity reduce the speed to half Combat Speed until the charge is dropped. Units can cooperate to tow an oversized mass.

A unit or object may be attached to the towing unit if they are both stationary and in contact for a whole turn (the units are not necessarily side by side, just near enough to drag cables from one to another). They then move together.

Unlimbering a towed item requires one action. If the towing unit is moving when it lets go, the towed item goes out of control like a vehicle missing a Top Speed turn (see page 51).

• MORALE

Morale is an important part of warfare. No commander can be truly sure of what his troops will do once under fire. Only totally fanatical or automated forces are immune to the effects of morale, and even the best trained soldier will hesitate to rush a gun position under withering firepower. To the men down in the trenches or sitting in their fragile vehicles, it will always seem better to stay put than to place themselves in harm's way.

The *Gear Krieg* Morale rules deal more with command control rather than with rout. The rules are structured in a way that will allow players to make their own choices when it comes to falling back and regrouping. Instead of affecting the units' will to stay and fight, poor morale affects die rolls, thus forcing the commander to make some difficult choices. Will he push his troops, knowing that their efficiency is degraded, or will he allow them to fall back to regroup, possibly losing precious terrain and objectives?

Structure Example

Each MU of a three-section bridge has a Damage Capacity of 100 and a Size Capacity of 10. The middle section is elevated higher than the other two and the surrounding terrain. The bridge spans a chasm that is lower than the surrounding terrain.

If a Size 12 vehicle attempts to cross the bridge, it must pay the normal MP cost for Clear terrain to travel across. Since the vehicle is too large for this bridge, it must test for bridge collapse. Upon entering the first bridge section, the vehicle's owner rolls one die. On a result of 2 or less (Size 12 - Size Capacity 10), the bridge loses 20 damage points (one-tenth of its original Damage Point Capacity times the Size difference). If the bridge is damaged, the roll is repeated until the roll is greater than 2 (at which point the bridge stabilizes) or until that section of the bridge collapses.

If either end of the bridge collapses, the vehicle will find itself in Rubble. If the middle part of the bridge collapses, any vehicle on it will suffer a fall since it is higher than the surrounding terrain.



MORALE THRESHOLDS

Morale Thresholds are based on the experience level of the individual units or vehicles: Before the set-up phase, each player calculates the Morale Threshold of his combat groups. A squad's Morale level is equal to the total Morale Threshold of the soldiers composing it, divided by the number of soldiers in the squad (rounded up to the nearest whole number).

For example, a squad with two Veteran crews (Morale 2) and three Qualified crews (Morale 3) will have a Morale Threshold of $(2+2+3+3+3) / 5 = 2.6$, rounded up. The Morale Threshold of this squad is 3.

FANATICAL UNITS

Some people believe so fervently in the cause they are fighting for that they are ready to die for it. They will lay down their lives without flinching if the situation demands it, and the thought that they may well die in the battle simply does not affect them. Such fanatical units are immune to the effects of Morale. If the Morale rules are used, Fanatical units double their Threat Value. If applicable, this is noted in the Tables of Organization & Equipment of the armies.

MORALE CHECKS

Before the game, each player rolls against his unit's Morale Threshold to determine the initial Morale level of his troops, for every individual vehicle and infantry squad in his unit.

The table below lists the events when a Morale check is required during the engagement. Morale checks are rolled using the combat group commander's Leadership Skill against the combat

group's current Morale Threshold. If successful, the combat group acts as normal. If the check is failed, the combat group suffers from a -1 penalty to all die rolls, including future Morale checks. A spare die is suggested to keep track of the die penalty caused by poor morale. As the group gradually loses its will to fight, its combat performance is affected and starts to rapidly degrade. Penalties caused by poor morale can be removed by the commander, however, by rallying the group and reorganizing it. See *Rallying* for the rule.

Morale checks are made only in some specific situations, as listed in the Morale Checks table below. A vehicle is counted as destroyed if it loses its capacity to both move and fight, suffers an Overkill result, or the crew is put out of action. An infantry trooper is considered hit if he has lost at least one damage point. Lastly, a combat group is considered under fire by artillery if at least half its units (round down) are fired upon by one or more enemy units to which they cannot trace a Line of Sight.

RALLYING

The penalties caused by failed Morale tests will soon prove crippling, but they can be removed by performing an action called Rally. This is done by the commander of the combat group, who must spend the action to roll a new Morale check, again using his Leadership Skill. Only one Rally is attempted per action, although multiple attempts are possible if sufficient actions are available. If successful, the Morale level of the combat group rises by one (i.e., a single -1 modifier is removed). If the combat group is rallied away from the enemy (under Obscurement and with no LoS to an enemy unit), all negative modifiers are taken away automatically. The units must be within one MU of the leader, else a functioning Communication system is required to participate in the Rallying action.

Morale Thresholds

Type	Threshold	TV Multiplier
Legendary/Fanatic	0	x2
Elite	1	x1.75
Veteran	2	x1.5
Qualified	3	x1
Rookie	4	x0.25

Morale Checks

Event	Modifier to Threshold
Before the set-up phase (initial Morale level)	0
Single vehicle is destroyed	0
Per additional vehicle destroyed during the turn	+1
Two infantry soldiers are hit within a single squad	0
Per additional trooper hit during the turn	+1
Combat group is under fire by artillery	+1



MISSION PRIORITIES

Not all missions have the same importance in the eyes of the soldiers. A simple foraging patrol will mean much less to the men than the defense of their home town, and this will most certainly affect their morale and performance level. If the battle is being fought for something precious in the eyes of the soldier, he will place less importance on his own survival.

Missions can be classified as either High, Medium or Low priority. High Priority missions are those missions that must simply not fail, because the emotional cost attached to failure is too high. The defense of one's home town is a good example of one such mission. Although this does not necessarily mean that the troops will fight to the death, they will stand their ground much longer. All Morale tests are made with a +2 modifier on the dice roll.

Medium Priority missions are the everyday military actions. They are important, but not overly so. Most engagements will fall in this category: the troops know they must do their best, but if they fail only the battle is lost, not the war. There is no modifier attached to missions of this type. Low Priority missions are those that have little or no consequence to the direct survival of the force. Low Priority missions cause a -2 penalty on all Morale tests because the troopers are unwilling to lay down their lives for unimportant objectives and will actively seek to escape or avoid hostile forces.

FATIGUE

The fatigue level of the soldiers has a great influence on their combat performance. For record-keeping simplicity, troops can be classified as either Fresh, Tired or Exhausted.

Fresh troops have just arrived on the battlefield. They are in good shape, had a good night's sleep and are ready to face whatever the enemy will throw at them. All Morale checks are rolled with a +2 modifier. Tired troops have been in the field for a few weeks, or have seen combat or other tense situations in the past few days. This is considered the default fatigue level and has no effect on Morale checks. Exhausted troops have been on the march for quite some time or have faced battles several times during the past few days. They are near the limits of their endurance and make very poor fighters. Such a fatigue level will normally be used only for very specific scenarios. Exhausted troops have a -2 modifier on all Morale checks.

SPECIAL CASES

The following situations are special cases that may crop up during the game. As with all other optional rules, they may be used or omitted at the player's discretion, as long as those rules chosen for the game apply to both sides equally.

Flame Weapons: Fire has a profound psychological effect on human beings, even more so when it is used as a weapon. Everyone, no matter how brave, has a distinct fear of being burned.

Whenever a combat unit is attacked by a flame weapon (weapons with the Slow or Fast Burn characteristic), it must either immediately roll against its Morale Threshold or retreat at least one MU from the attacker. If they cannot retreat and fail their roll, they will immediately lay down their weapons. Unless they are taken prisoner or killed, they can be rallied as normal in subsequent phases.

Units that are immune to fire, either because of a Perk or because they are too massively armored to be affected (MoS of 5+ required to cause damage), do not have to check for Morale and ignore the psychological effects of flame weapons.

Panic: Rookies can succumb to panic when faced with combat. When a rookie unit (Skill level of 1 or lower) is attacked for the first time, a Morale check should be immediately rolled to see if they will succumb to panic. If the roll succeeds, there is no further effect, and the unit need not test again for panic until the next battle.

If the test is failed, the unit is pinned into place. It can neither advance nor spend actions, but it can move away from the enemy if there is some Obscurement between them and the hostile forces. Units that fumble their Morale test immediately rout and attempt to leave the table by the shortest path. They may be rallied as normal.

Surrendering: When faced with overwhelming odds, troops will sometimes surrender to the enemy rather than be pointlessly killed. If the combat group finds itself cut off from the rest of its main force (no line-of-sight to friendly units and out of communication range) and its Morale penalties are equal to -3 or less, the group will lay down its weapons and surrender. Fanatical and elite units (Skill level four and more) may ignore this rule and keep on fighting.



HEX-MAP CONVERSION

Though it is visually spectacular, a full-fledged miniature battlefield requires a large investment in time and material that not everyone might want to make. It is possible to play *Gear Krieg* on a regular wargaming hexagon-covered map, however, with very little adaptation. The same rules are applied with a few exceptions.

Each battlefield hex represents a 50-meter wide area of terrain. One hex is equal to one MU; therefore, one MP allows the unit to move forward one hex in Clear terrain. For game purposes, the terrain of the entire hex is considered to be the terrain type that is present at the center of the hex (marked by a dot on many maps).

Each increase in elevation levels represents a 5-meter increase in height (smaller altitude variations are not significant enough to be represented at this scale). For line of sight purposes, ground vehicles are hidden by this, except walkers, who can see above one elevation level.

Units must be placed so that their front faces one side of the hex; they cannot face a corner. The turning rules remain the same: vehicles can turn 60 degrees (one hex side) at no cost.

The hex sides also make both the fire and defense arcs easier to visualize. Line of sight can be determined by holding a ruler between the centers of the two units involved; any hex overlapped by the ruler counts for Obscurement purposes. Range is determined by counting the hexes between the two units (see at right).

With the exceptions noted above, all other combat rules apply normally.

Movement & Terrain Example

A tank is moving at Top Speed (6 MPs). It begins in a Clear hex. It travels forward two hexes across Clear terrain (expending 2 MPs) and then turns one hex-facing clockwise (expending 0 MPs). The tank then moves forward 1 hex across Rough terrain (expending 2 MPs), turns two hex facings counterclockwise (expending 1 MP), and ends its movement. The remaining 1 MP is not enough to enter the Rough terrain the vehicle is now facing (which would cost 2 MPs to move into) and is lost.

• DOTS AND HEXES

The dot in the center of each hex on the mapboards is there to help you determine what the terrain type of the hex is. The terrain of the hex is whatever mapboard feature the dot is on top of. If a little bit of the drawing representing broken terrain spills over into a primarily clear hex, the dot will be on clear terrain, indicating that the terrain type is clear. If one or more terrain elevation contour lines cross through a hex, the elevation level of the hex is the elevation level the dot resides in.

• STACKING

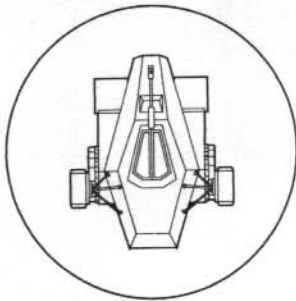
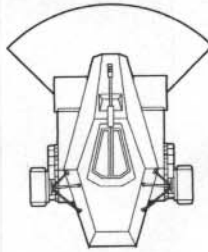
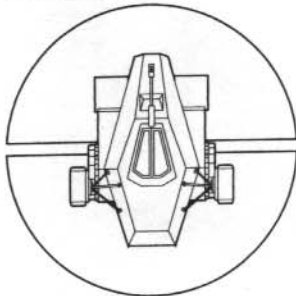
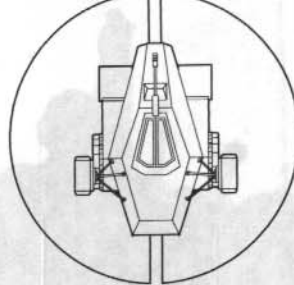
The term "stacking" refers to how many units can reside in a single mapboard hex. While the standard hexes are fifty meters wide, a certain security margin must be observed during the chaos of combat lest accidents happen. For this reason, the number of units allowed in a single hex is limited by stacking.

Each 50-meter hex can take up to a total of 30 Size points worth of vehicle and other units. The Size of each vehicle is always noted on its record sheet. Five or less infantrymen count as the equivalent of a Size 3 vehicle for stacking purposes (an entire squad of ten would thus take up 6 points).

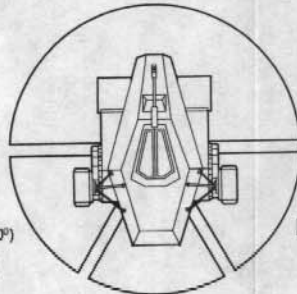
RANGE

Range is equal to the number of hex between the two units plus the hex in which the target is located. Range is measured in the most direct line between the attacker and the defender. If combat occurs between units in the same hex, the range is considered to be Point Blank (0).

Fire Arcs

Turret (360°)

Fixed Forward (90°)

Forward (180°)

Left (180°) **Right** (180°)

Rear / Aft (180°)

Defense Arcs

Front (180°)

Left Rear Flank (60°)
(-1 Defense Modifier)

Right Rear Flank (60°)
(-1 Defense Modifier)

Rear (60°)

(-2 Defense Modifier)

FIRING ARCS

Vehicles may only target opponents that are within their weapons' firing arcs. Each weapon is mounted within a certain arc and can only fire in it; targets that lie outside cannot be targeted.

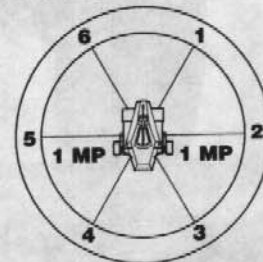
There are six common firing arcs (see diagrams at left): Forward (F), Right (Rt), Left (L), Rear (Rr), Fixed Forward (FF) and Turreted (T). The first four are 180-degree arcs on their respective sides. Side arcs include directly forward and backward. The fixed forward arc is a 90-degree arc on a vehicle's front facing. Note that side or rear fixed arcs are also possible, but uncommon. Turreted arcs span 360 degrees.

Infantry squads do not have firing arcs and may attack anything in a 360-degree radius around them.

DEFENSE ARC

The defender's orientation, when attacked, can reduce his chances of successfully escaping the attack, either because of inattention or thinner armor. Most combat vehicles carry less armor on their back than on the front, due to unavoidable engineering concerns. More importantly, however, crews cannot defend against attacks they do not see coming. Attacks coming from the rear are much more dangerous than attacks from the front. The modifiers listed in the diagram at left are applied when defending against attacks coming from within an arc.

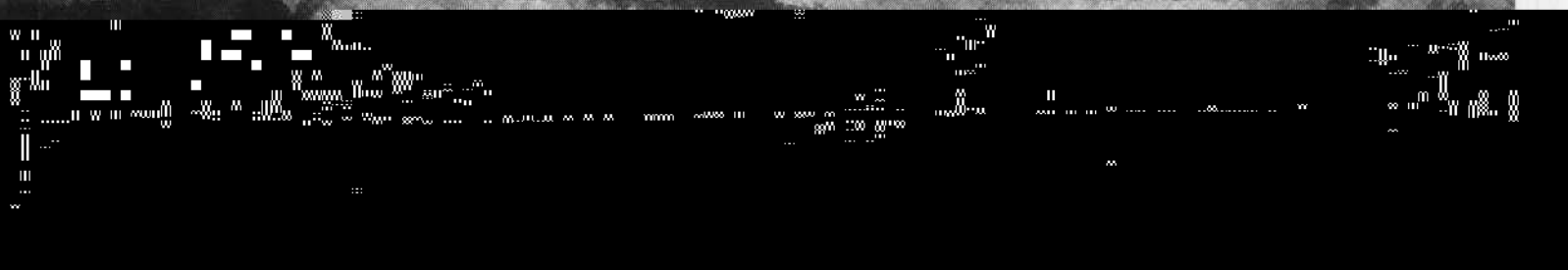
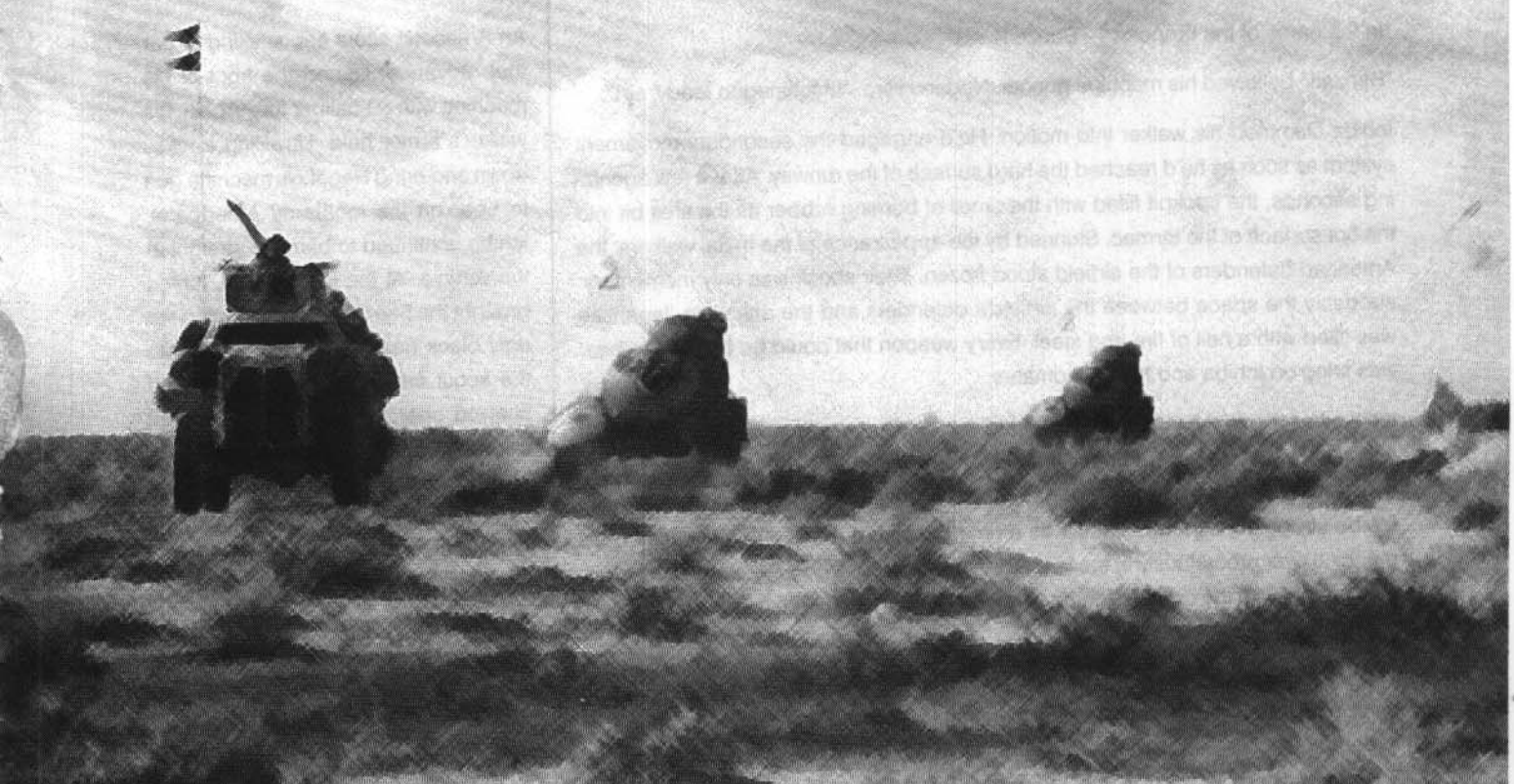
Fire Arcs

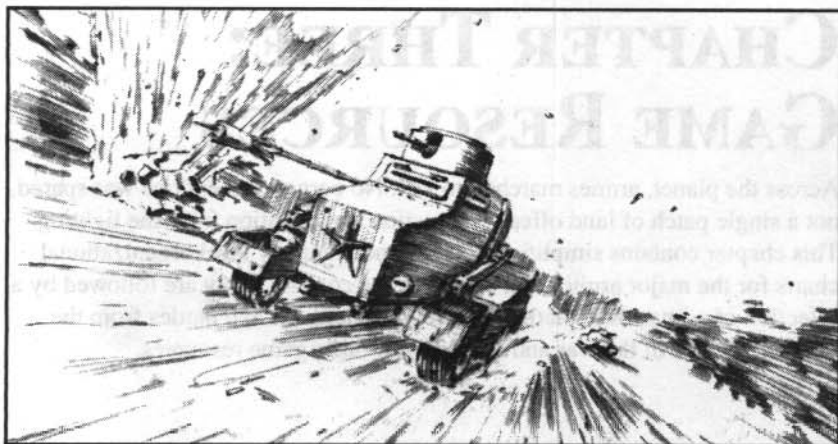




CHAPTER THREE: GAME RESOURCES

Across the planet, armies marched to war. No corner of the globe was spared, not a single patch of land offered protection and isolation from the fighting. This chapter contains simplified platoon and company level organizational charts for the major armies that fought in the conflict. They are followed by a selection of scenarios depicting a variety of incidents and battles from the first three years of the war and a number of other game resources.





BANZAI!

Gun-so Ichiba Akira hollered joyously as his Type 38 Shiki walker crashed out of the Philippine jungle and onto the verges of the cleared ground. Spread out before him was the broad expanse of tarmac of the American airbase of Clark Field, largest in the whole Philippine archipelago.

Waving to his right and left, he saw the machines of Nitto and Masume moving out to flank him. Behind them, the company of infantry they had been assigned to support boiled out of the jungle in a khaki-clad wave. Ichiba leveled his Teppo-yari at the positions of the enemy.

"In the name of the Emperor — Banzai!"

"Banzai!" bellowed his machine gunner, Nagano Hiro. "Machinegun ready, sir!"

Ichiba slammed his walker into motion. He'd engaged the secondary movement system as soon as he'd reached the hard surface of the runway. After a few agonizing seconds, the cockpit filled with the smell of burning rubber as the tires bit into the hot surface of the tarmac. Stunned by the appearance of the metal walkers, the American defenders of the airfield stood frozen. Their shock was only momentary: suddenly the space between the airfield's defenders and the attacking Japanese was filled with a hail of fire and steel. Every weapon that could be brought to bear was firing on Ichiba and his squadmates.

Ichiba was thankful for the thickly padded vest and helmet he wore. The violence of the maneuvers he threw his ungainly vehicle into as he charged slammed him around his seat like a stone in an empty can, and that was with the restraining harness! Ichiba struggled with the controls as a near miss from a bursting shell heeled his machine over precariously to the left. As the right leg assembly slammed back down into contact with the ground, Ichiba was jolted forwards and the restraints bit cruelly into his shoulders.

The flash of the tracers from the enemy machine guns snapped by him, the armor shrugging off the occasional glancing hit without any appreciable damage. Nagano's Type 92 machine gun began hammering with its trademark thump, thump, thump. The canvas bag on the breach of the gun jerked as the casings were flung into it. In

its first testing, those had bounced all over the inside of the machine, burning both crewmen with the hot brass. Luckily, Ichiba, thought, I don't have to worry about *that* anymore!

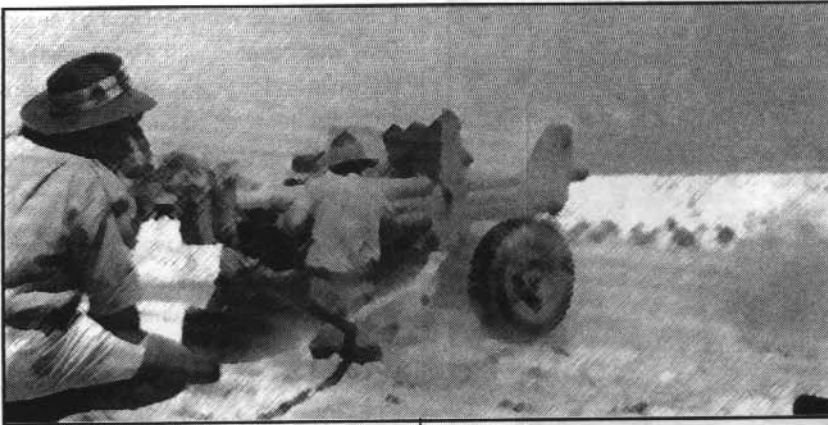
He jinked hard to the left to avoid more incoming fire, but Masume wasn't so lucky. A direct hit on his walker's mid-section by an enemy field gun blossomed into a lurid fireball. Completely out of control, the burning wreck tumbled crazily to the pavement, rolling over, shedding bits of armor and machinery like bizarre metallic confetti. Ichiba swayed his machine to his left, avoiding the spinning ruin of the right arm of Masume's machine. Incongruously, Ichiba was struck by how beautiful the fireball was. The reds and oranges of the flames reminded him of a chrysanthemum, the oily black smoke its leaves, just like the chrysanthemum Mon painted on the armor of their regiment's walkers.

An American scout car, seeking to bar their advance, lashed the front of his machine with 30-caliber fury. Again, his walker's armor held. Unwilling to slow down and bring Nagano's machine gun to bear on the foolhardy Americans, Ichiba continued to barrel in straight at the vehicle. At the last second, Ichiba brought the Shiki up short, plunging the ugly black head of his Teppo-Yari into the scout car's side. The magnetized shaped charge explosive on a stout bamboo pole detonated with an almighty thump. Fragments of the vehicle's own armor, blown across the scout car's fighting compartment by the force of the blast, tore the hapless American crewmen to shreds. Ichiba held his face immobile as he turned away. The shrieks of the dying enemy were horrible, but a samurai must hold himself resolute in the face of the enemies of the Emperor.

ARMY LISTS

The following are simplified organizational charts for wargaming with **Gear Krieg** on the Platoon and Company levels. Higher levels (Battalion and Regiment) are possible, but play can bog down and will tend to fill the table with too many units. It is therefore not recommended unless smaller miniatures (such as micro-armor) and lots of assistants are used. More complete and detailed TO&Es (Tables of Organization & Equipment) for each army will be covered in later Army and Theater Books.

World War II was fought in many lands and under many different climates, from the deserts of North Africa to the fields of France, from the snowy steppes of Russia to the green jungles of the Far East. The following Army Lists include some generalized color guidelines. The subject of camouflage is a book in its own right, so all of the possible schemes cannot be listed here (there are many such books available through libraries and book dealers). Future **Gear Krieg** books will cover the subjects of paint schemes and vehicle markings and uniforms in more detail.



PRESENTATION

General Introduction: This section briefly sketches out the army and lists reasons why Players would want to game with and collect miniatures for it.

Tactics and Morale: This section is an examination of the tactical doctrine used by the army in question. The units' default Morale rating is given; Players may increase the Morale rating of their combat units by paying the appropriate cost multiplier (see page 70).

Color Schemes: A brief description of uniforms and color schemes used by the army is listed here.

Rifle Company TO&E: The composition of the Rifle Company is provided here, followed by a breakdown of each type of squad found in the Company. Threat Values are provided for each squad. There is also a separate listing for support units (usually MG teams) that would historically be attached to the Company from the Battalion level. One or two such teams per Company would be typical.

Armor Company TO&E: The composition of the Armored Company is provided here, followed by a breakdown of each type of Platoon found in the Company. Players may choose the vehicle variant they want to field.

DESIGN NOTES

Throughout the conflict, unit organization evolved to take into account new vehicles and supply lines, and thus will require an entirely separate book to explore in depth. The average units presented here were the building blocks from which armies participating in the conflict were constructed. While it might be enjoyable to fight a battle with an entire force consisting of Panzerkämpfers with Elite crews, it won't be a credible force — and more than likely no fun at all for either Player.

Most, if not all, of the nations involved in World War II had various elite or "special ops" units. Those are outside the scope of this rulebook and will be dealt with later in their relevant army publications. Similarly, the armies utilized far more types of vehicles and equipment than could possibly be listed here; as Theater and Army sourcebooks are released, data for further vehicle types will become available. The lists presented in the following pages are intended as a guideline to enable Players to wargame actions from the timeframe covered in this volume. Due to space considerations, only armies of the major combatants could be listed; other factions (France, Italy, etc) will be published at a later date.

Threat Values (TV) have been assigned to infantry squads and vehicles. It will be a relatively easy matter for Players to design their own battle scenarios by simply agreeing on a TV total for each side and purchasing units to add up to those points. Given the differences in arms and equipment available to each army, not to mention personal preferences and tactical styles, an interesting game is sure to result!



GERMANY

Born out of the ashes of the Imperial German Army of World War I and germinated from the seeds of the Army of the Weimar Republic, the Army of Hitler's Third Reich was a force to be reckoned with. The German Army has got to be one of the most fun and fascinating to collect and paint from a wargamer's point of view. The plethora of vehicles and equipment to choose from ensures a tabletop army that is guaranteed to hold the Player's interest.

The Germans are one of the powerful armies in the game. They do everything very well, but the trade-off is the old saw of "quality vs. quantity." A German Player will often find himself in the same situation that the German generals did: man for man, their troops were better but often numerically inferior, a situation that became more and more pronounced as the war progressed.



TACTICS AND MORALE

The German Army — the Wehrmacht — patented the concept of Blitzkrieg (lightning war). Determined not to become bogged down in the static warfare of WWI, German military thinkers developed their new army to be able to punch a hole in the enemy's line and exploit the breakthrough before the enemy had time to react. The Panzers, screened by Kämpfers, armored cars and motorized recon units, were the hammer that broke the enemy line. Infantry, supported by more screening units, artillery and Panzers, moved up behind to consolidate and hold newly captured ground.

All of this was supported by close cooperation by the Luftwaffe (air force).

The German soldier was highly motivated. Biased by years of Nazi propaganda and a desire for revenge for the nation's defeat in the First World War, he was not likely to run. The Wehrmacht was a highly professional army, well equipped and trained for the new mode of warfare its masters were to unleash upon the World.

German vehicle crews and infantry squads have a default Morale Threshold of 2 (Veteran). Certain units, like the Fallschirmjäger and the Waffen SS, have a default Morale Threshold of 1 (Elite).

COLOR SCHEMES

From 1939 on, the Wehrmacht used a flat dark gray, which has become known as "Panzer Gray," as the standard paint scheme for all of its vehicles and walkers. Even the Afrikakorps units went into action in their first few battles in Panzer Gray, because there had not been time or supplies available to repaint them. Afrikakorps units can therefore be painted in any combination of plain Panzer Gray, Panzer Gray "muddied-up" by their crew with a liberal application of dust, or the more famous yellow-brown color that all later Afrikakorps units later sported.

In Russia, once winter set in, the Panzer Gray was covered with a whitewash of calcimite and lime. It washed or rubbed off easily however, so German units often appeared to be an ugly patchwork of gray and white.

At the beginning of the war, the German infantryman marched into battle in a field gray tunic and steel helmet, with darker gray trousers and black jackboots. By 1941, the trousers were changed to the same field gray as the uniform tunic. Elite units such as the Fallschirmjäger and the Waffen SS had already adopted camouflage covers for their tunics and helmet covers, but these were not generally in use by the Wehrmacht's regular soldiers.

GERMAN MOTORIZED RIFLE COMPANY

The following is an organizational breakdown of a German Motorized Rifle Company of the Wehrmacht. Other units of the Wehrmacht and most units of the SS had a different TO&E, which will be covered in future books.



Rifle Company

142 men divided into a Company HQ, three Rifle Platoons, one Heavy Weapon Section, and one Transport Section. Each Rifle Platoon has a command squad and three Rifle squads.

Command Squad TV: 26

1	Officer	SMG
2	NCO	SMG
3	Rifleman	Rifle
4	Rifleman	Rifle
5	Rifleman	Rifle
6	Rifleman	Rifle

Note: This is the only squad in the platoon that has a radio (Rating -2, 2 km range).

Rifle Squad TV: 51

1	Squad Leader	SMG
2	Rifleman	Rifle
3	Rifleman	Rifle
4	Rifleman	Rifle
5	Rifleman	Rifle
6	Rifleman	Rifle
7	Rifleman	Rifle
8	Rifleman	Rifle
9	Rifleman	LMG

Anti-Tank Team TV: 11

1	AT Gunner	Anti-Tank Rifle
2	Loader	SMG

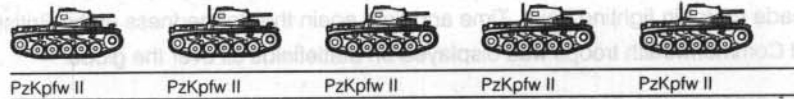
Machinegun Team TV: 13

1	Gunner	LMG
2	Assistant Gunner	SMG

GERMAN ARMOR

There are three tank platoons in a company, and two tanks for the company HQ.

Light Armor Platoon



Medium Armor Platoon



Heavy Armor Platoon



Panzerkämpfers were organized similarly to the tanks, with five units per platoon, including the HQ platoon.

Light Panzerkämpfer Platoon



Medium Panzerkämpfer Platoon





GREAT BRITAIN AND THE COMMONWEALTH

The British Army has always been the smaller service. Since Great Britain is an island nation, the lion's share of its military budget has traditionally gone to the Royal Navy and this remained true in World War II. But whatever the Army lacked in size, it made up for in fighting spirit. Time and time again the doggedness of the British and Commonwealth troops was displayed on battlefields all over the globe.

The wargamer who decides to collect a British army will find that his troops reflect that tenacity of spirit. The British armor's slashing cavalry style attacks will appeal to Players who missed the charge of the Light Brigade. Not quite the equal of the Germans, the British are, however, good "all-rounders."



TACTICS AND MORALE

The British Army had a long history of professionalism and excellence. It was British military theorists such as Liddell-Hart and Hobart who influenced Guderian's thinking as he was writing *Achtung! Panzerkämpfer!* in the mid 1930's.

This being said, British theory differed from the German on the proper use of armor. Heavy walkers and slower tanks, like the Matilda, were employed in a support role to aid the infantry, while faster vehicles, like the Cruiser series and the Crusader variants, were de-

ployed, along with the walkers, in faster cavalry style attacks. It was no coincidence that the two main British walker types fielded in the early days of the war were named after English Civil War cavalryman types.

The infantry of Great Britain and the Commonwealth were solid and dependable. As the war progressed, the Germans accorded great respect to them, reckoning that two "Tommys" were the equivalent of a single German soldier. They reckoned that one German was equal to ten Russians or Americans, by comparison!

Commonwealth infantry and vehicle crews have a default Morale Threshold of 3 (Qualified). Certain units, such as Guard infantry and Armored units, have a Morale Threshold of 2 (Veteran).

COLOR SCHEMES

The vehicles and walkers of the British Expeditionary Force (BEF) were painted dark green, usually with a pattern of gray or brown swatches. British forces in the Pacific used the same scheme.

North African and Middle East-based units utilized a variety of desert schemes during the conflict, the most striking being the early-war "pattern breaker" scheme: a base coat of sandy brown over which were painted angular shapes of black, dark brown, gray and sky blue, in an attempt to break up a vehicle's silhouette. It was common for all the vehicles in a section to have names using the same first letter of the alphabet (e.g. "H" consisting of Hector, Hannibal, Homer, Horace and Hasrubal). City names and mottos like "Valorous" were often used instead.

The British "Tommy" and his colonial counterparts soldiered throughout the war in the traditional Khaki battledress that had changed little from the First World War. They retained the "Tin Hat" style helmet from WWI as well.

BRITISH INFANTRY COMPANY

The following is a typical British Army company. The organization adopted was tight, allowing sustained operations alone or as part of a larger force. The British were so satisfied with this organization scheme that they adopted it for all Commonwealth infantry formations (it can thus be used to represent Canadian or Australian troops).



Rifle Company

124 men divided into three Rifle Platoons and a HQ Platoon.

Each Rifle Platoon has a Platoon HQ and three Infantry Sections

Command HQ TV: 29

1	Officer	Pistol
2	NCO	SMG
3	NCO	SMG
4	AT Gunner	Anti-Tank rifle
5	Loader	Rifle
6	Mortar man	Light Mortar
7	Loader	Rifle

Note: This is the only squad in the platoon that has a radio (Rating -2, 2 km range).

Rifle Section TV: 43

1	Section Leader	SMG
2	Bren Gunner	LMG
3	Loader	Rifle
4	Loader	Rifle
5	Rifleman	Rifle
6	Rifleman	Rifle
7	Rifleman	Rifle
8	Rifleman	Rifle
9	Rifleman	Rifle
10	Rifleman	Rifle

Squad Attachments (can be attached to any squad as per scenario):

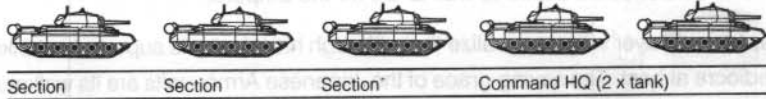
Machinegun Team TV: 13

1	Bren Gunner	LMG
2	Assistant Gunner	Rifle
3	Loader	Rifle

BRITISH ARMOR

The following is an organization of a British and Commonwealth Armor Platoon. Actual TO&E varied not only between services but within regiments as well. Walkers were sometimes part of an armored platoon.

Armored Platoon



Section Section Section Command HQ (2 x tank)

Light Armored Section



Mk. IV Honey Mk. IV Honey Mk. IV Honey Mk. IV Honey Mk. IV Honey *

Medium Armored Section



Crusader Crusader Crusader Crusader Crusader

Heavy Section



Matilda Mk II Matilda Mk II Matilda Mk II Matilda Mk II Matilda Mk II

Light/Reconnaissance Walker Section



MVIII Cavalier MVIII Cavalier MVIII Cavalier MVIII Cavalier MVIII Cavalier

Medium Walker Section



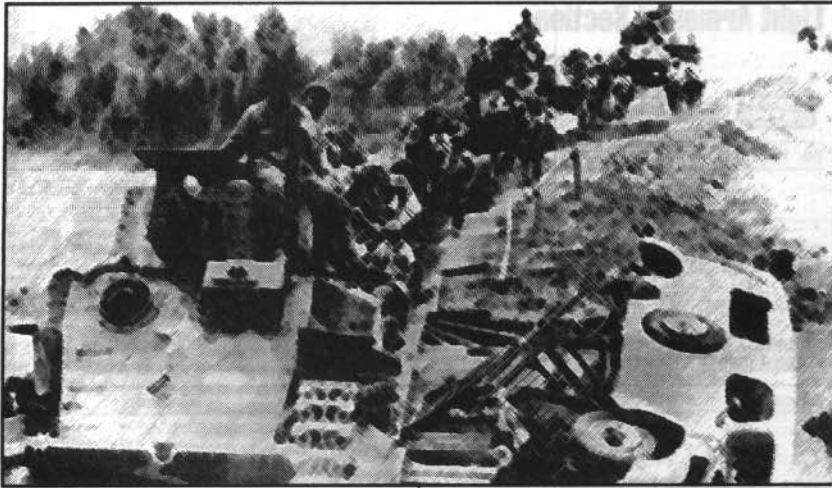
MV12 Roundhead MV12 Roundhead MV12 Roundhead MV12 Roundhead MVIII Cavalier
(may replace Roundhead with Lend-Lease M12 Longstreets)



IMPERIAL JAPAN

The Imperial Japanese Army was the modern day heir to the traditions of the Samurai. The old code of Bushido had experienced a resurgence in Japan during the 20's and 30's, coinciding with the rise in power of Tojo's militarists. The *Banzai Charge* rule detailed below is included to represent the fanatical devotion of the Japanese troops to their Divine Emperor: time after time the Japanese would hurl themselves at their enemies in terrifying human wave attacks. They truly believed that the highest honor a soldier could aspire to was to die for the Emperor.

The Japanese Player will soon realize that although his infantry is superb, his tanks are mediocre at best. The saving grace of the Japanese Armor units are its walkers, which can hold their own against those of other country.



TACTICS AND MORALE

The Japanese soldier was imbued with the spirit of Bushido (the Way of the Warrior). Once a member of the Imperial Armed Forces, it was understood that the individual's life was at the disposal of the Emperor. No greater honor existed than dying in His service. Japanese tactics were straightforward: whenever possible, they attempted to close with and destroy the enemy. A certain amount of inter-service rivalry hampered close cooperation between Army and Navy units, which could have unfortunate results in the field.

Japanese walker, vehicle crews and infantry have a default Morale Threshold of 2 (Veteran).

Special Rule: Japanese infantry were known for their ability to perform furious "Banzai charges," ignoring horrific casualties in order to attack the enemy directly. In order to simulate this, the following special rule applies.

A Japanese squad wishing to initiate a Banzai charge must first pass a normal Morale Threshold check. If it fails, the unit may still move normally. If it passes, it still acts normally with the following exceptions: the number of casualties that must be inflicted on the squad to cause a Morale check rises from 2 to 6. Banzai charging infantry must move directly toward the nearest enemy infantry unit.

COLOR SCHEMES

All Japanese armored vehicles were painted either a deep dark green or a dark yellow-brown. Camouflage was often provided by adding a pattern of yellow-brown wavy lines to green vehicles or green splotches to a yellow brown one. Tanks had a small white star on the front of the hull, while walkers were emblazoned with a chrysanthemum Mon (badge) prominently displayed on the chest. As both the Imperial Army and Navy had their own ground forces, Imperial Army walkers and vehicles sported a Red Sun on a white field (known as the "meatball") and the Imperial Navy used the Rising Sun emblem.

Japanese ground troops wore a combat uniform of yellow-brown, with a dark green helmet. Often a distinctive peaked fatigue cap with a three-sectioned neck cover was worn in place of the helmet. Low boots and puttees (tapes wound around the leg from ankle to just below the knee) were worn on the feet. Officers wore their swords on active service; some were priceless blades made hundreds of years earlier, and others were only cheap modern copies.

IMPERIAL ARMY RIFLE COMPANY

The organization below represents a typical Japanese rifle company. There were of course, variations on this organization, but this is intended as a sample of a more "average" formation. More specialized units will be covered in a forthcoming sourcebook.

Rifle Company "A" Type

262 men, divided into a company HQ, three Rifle Platoons, one Heavy Weapon Platoon, and one ammunition platoon. Each Rifle Platoon is made up of a command squad and three Rifle squads.

Command Squad TV: 5

1	Platoon Commander	Pistol
2	Liaison NCO	Rifle

Note: This is the only squad in the platoon that may be issued a radio (Rating -2, 2 km range). Most radios were found at the company level.

Rifle Squad TV: 56

1	NCO	Rifle
2	Rifleman	Rifle
3	Rifleman	Rifle
4	Rifleman	Rifle
5	Rifleman	Rifle
6	Rifleman	Rifle
7	Rifleman	Rifle
8	Rifleman	Rifle
9	Rifleman	Rifle
10	Rifleman	Rifle
11	Rifleman	Rifle
12	Rifleman	Rifle
13	Rifleman	Rifle
14	Machinegunner	LMG

H. Weapon Squad TV: 45

1	NCO	Rifle
2	Rifleman	Rifle
3	Rifleman	Rifle
4	Rifleman	Rifle
5	Rifleman	Rifle
6	Rifleman	Rifle
7	Rifleman	Rifle
8	Rifleman	Rifle
9	Rifleman	Rifle
10	Rifleman	Rifle
11	Gunner	LMG

Option: Replace LMG with AT Rifle

IMPERIAL JAPANESE ARMOR

The following is a table of organization for an Imperial Army armor company. Walkers: Most walkers are organized as part of an Infantry group, Walker Company or in the reconnaissance regiments. They may on occasion be organized with a light or medium Tank Company.

Light Tank Company



Platoon Platoon Platoon Company Command Tank

Platoon



Type 94/Type 95 Type 94/Type 95 Type 94/Type 95

Medium Tank Company



Platoon Platoon Reinf. Platoon Reinf. Platoon Command Tank

Platoon



Type 97 Type 97 Type 97 Type 97

Reinforced Platoon



Type 97 Type 97 Type 97 Type 97 Type 94/Type 95

Walker Platoon



Shiki 38 Shiki 38 Shiki 41



SOVIET RUSSIA

The Red Army was in a sorry state in the early years of the conflict. Stalin's bloody purges during the 1930's had liquidated any officers above the rank of captain who had ever displayed a shred of competence or integrity. In safeguarding his own domestic position, Stalin had laid the groundwork for the most monumental debacle in Russian military history, Operation Barbarossa. When the German attack came, huge numbers of Russian troops were caught unprepared because of the inefficiency of the Red Army command structure (not to mention Stalin's ten-day fugee).

The **Gear Krieg** Player who opts for a Russian Army will find his troops to be the opposite of their German and Japanese opponents. Quantity over quality is the watchword here; the Russians suffer from a lack of seasoned troops and from a definite absence of radios in their command structure. Typically, only the company HQ unit would have a radio, and that was only to receive orders from above. Tank company commanders transmitted battle orders to their units by shooting or semaphore flags! But in one respect the Russians were always top notch: they were rock solid on defense. The special rule included below reflects this historical fact.



TACTICS AND MORALE

Soviet tactics in 1941 were by necessity defensive in nature, for Operation Barbarossa caught Stalin and his generals completely offguard. Large Red Army formations deployed in static defensive positions near the German border were encircled and pounded by the Luftwaffe and by artillery until they were compelled to surrender. Hundreds of thousands went into captivity or were sent to the death camps. Thousands more were simply executed by SS death squads.

Russian walker and vehicle crews, as well as infantry, have a default Morale Threshold of 4 (Rookie), although certain units (veterans of the Russo-Finish War) may be level 3 (Qualified).

Special Rule: the Russian soldier has historically always been extremely dogged on defense. To represent this, any Russian infantry squad may add +1 to any Morale check roll if they are in a defensive position (Hull-Down or in full cover).

COLOR SCHEMES

Throughout the war years, the Red Army kept to a basic and straightforward scheme of olive drab for all their vehicles and walkers.

Camouflage was almost unheard of. When it was used, a simple blotch pattern of dark brown or black was applied over the OD base coat. As soon as the first snows came, the Red Army would immediately paint their vehicles and walkers with a resilient white paint.

The Soviets often painted patriotic slogans or famous quotes from Comrade Stalin on the sides of their fighting machines, such as "the People of Worker's Collective #114 smite the Hitlerite Oppressors!" The Red Star was not used on combat vehicles, but walkers, which had much less flat area for slogans, usually sported a Red Star somewhere on the machine.

The Russian combat soldier was uniformed in a similar no nonsense fashion. Olive drab was again the color selected by the Soviet military. In winter, all soldiers received thick white winter garments.

RED ARMY INFANTRY COMPANY

The following organization is only a rough outline, as Red Army organization varied a great deal between regiments. This is a guideline for building an early war Russian unit.



Rifle Company

The typical Rifle Company was made up of four Platoons plus one Platoon HQ. Each Platoon was constituted of four Squads and one Command Squad.

Note: the Platoon HQ generally does not have a radio; most likely, only the Company HQ would have one (Rating -2, 2km range).

Command Squad TV: 29

1	Officer	Pistol
2	NCO	SMG
3	NCO	SMG
4	AT Gunner	Anti-Tank rifle
5	Loader	Rifle
6	Mortar man	Light Mortar
7	Loader	Rifle

Note: Only the squad in the Platoon HQ may have a radio (Rating -2, 2 km range).

Rifle Squad TV: 43

1	NCO	SMG
2	Rifleman	Rifle
3	Rifleman	Rifle
4	Rifleman	Rifle
5	Rifleman	Rifle
6	Rifleman	Rifle
7	Rifleman	Rifle
8	Rifleman	Rifle
9	Rifleman	Rifle
10	Machine gunner	LMG

Squad Attachments (can be attached to any squad or fielded independently as per scenario):

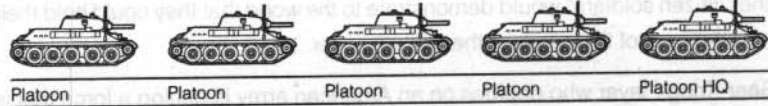
L. Machinegun Team TV: 13

1	Gunner	LMG
2	Assistant Gunner	Rifle
3	Loader	Rifle

RUSSIAN ARMOR

Russian armor organization was highly variable, depending on supplies and vehicle availabilities. The lists below are average representations.

Company



Medium Armored Platoon



Heavy Armored Platoon

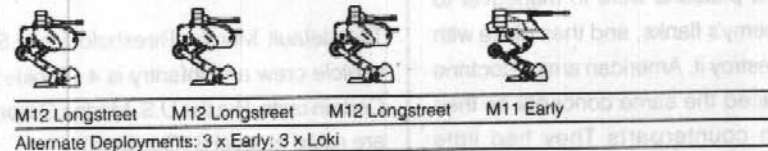


Superheavy Platoon



Though the Russians did not have a home-grown walker development program until 1941, they did field a limited number of American or British units obtained through the Lend-Lease program. They also made use of captured enemy machines — when they could keep them operating.

Lend-Lease Walker Platoon





THE UNITED STATES

The Army of the United States of America was a citizen army hung upon a skeletal framework of career soldiers. The average GI (short for Government Issue) or "dogface" was not a trained professional: he was simply there to get the job done and get back home alive. Unlike his Commonwealth counterparts from Canada and Australia, he had not volunteered for service, he had been drafted. Nevertheless, the "citizen soldiers" would demonstrate to the world that they could hold their own with the best of them before the war was over.

The Gear Krieg Player who decides on an American army is getting a force that is strong on equipment, if somewhat deficient in the morale of its troops. The US Army is the closest rival of the Germans in terms of the number of different vehicle types available, and as the war progresses American Players will have more and more gadgets and "wonder weapons" to choose from.



TACTICS AND MORALE

The U.S. army had taken the lessons of World War One to heart: great emphasis was placed on fire and movement. While the Heavy Weapons platoon suppressed the enemy with covering fire, the rifle platoons were to maneuver to the enemy's flanks, and then close with and destroy it. American armor doctrine embraced the same concepts as their British counterparts. They had little choice at the War's beginning, since there were no American tanks in service in the medium to heavy categories before 1942.

American soldiers were indoctrinated with the concept of the "citizen soldier." Its peacetime army was small, and only the pre-1941 buildup by President Roosevelt allowed the U.S. to be even close to being prepared to fight a war in two hemispheres.

The default Morale Threshold for U.S. vehicle crew and infantry is 4 (Rookie). Certain units, like the U.S. Marine Corps, are rated at level 3 (Qualified).

COLOR SCHEMES

The standard regulation color scheme for the US Army in all theaters of the Second World War was a dark olive paint scheme with prominently displayed white five-pointed stars. Many crews deliberately painted these out, however, as they found the stars made excellent aiming points for enemy gunners!

It was a common practice for vehicle crews to name their machines after wives, sweethearts, hometowns or whatever struck their fancy. Walker pilots often emulated their Army Air Force counterparts and decorated their machines with art that ranged from Disneyesque cartoons to highly accurate (and often rather risqué) representations of the female form.

The U.S. infantryman, or GI (for Government Issue), wore a combat uniform of olive drab. The shirt was a shade lighter than the jacket and trousers. Low boots were worn, usually brown. At the war's beginning, the US military was still using the "Battle Bowler" style helmet from WWI copied from the British. Convinced it did not offer adequate protection, a new and distinctive helmet was quickly adopted: it was immediately dubbed the "Wobble Pot" by the GI's due to its distressing tendency to bounce around alarmingly when its wearer had to run.

U.S. RIFLE COMPANY

The following is a table of organization for a U.S. Army Rifle Company. The Marines were organized on a different system, although for simplicity this TO&E can be used until U.S. Marine forces are detailed in later books.



RIFLE COMPANY

192 men, divided into five platoons: three Rifle Platoon, one Heavy Weapon Platoon, one HQ platoon.

Each Rifle Platoon has a Command squad and three Rifle squads.

Heavy Weapon Platoon have one Command squad and three Heavy Weapon squads.

The HQ Platoon is the same as the Rifle Platoon.

Command Squad TV: 9

1	Officer	Rifle
2	NCO	Rifle

Note: This is the only squad in the platoon that has a radio (Rating -2, 2km range)

Rifle Squad TV: 51

1	Squad Leader	Rifle
2	Assistant Squad Leader	Rifle
3	Rifleman	Rifle
4	Rifleman	Rifle
5	Rifleman	Rifle
6	Rifleman	Rifle
7	Rifleman	Rifle
8	Rifleman	Rifle
9	Rifleman	Rifle
10	Rifleman	Rifle
11	Rifleman	Rifle
12	Automatic Rifleman	LMG

H. Weapon Squad TV: 63

1	Squad Leader	Rifle
2	Assistant Squad Leader	Rifle
3	Rifleman	Rifle
4	Rifleman	LMG
5	Rifleman	Rifle
6	Rifleman	LMG
7	Rifleman	Rifle
8	Rifleman	Rifle
9	Mortarman	Light Mortar
10	Rifleman	Rifle
11	Rifleman	Rifle
12	Automatic Rifleman	LMG

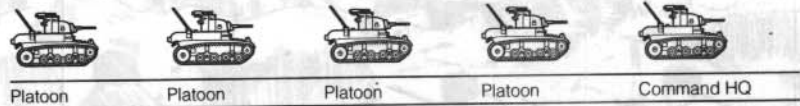
Machinegun Team TV: 13

1	Gunner	LMG
2	Assistant Gunner	SMG
3	Loader	SMG

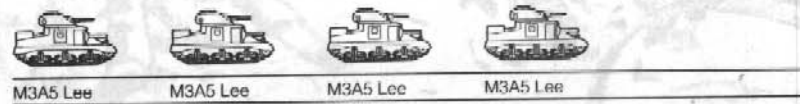
UNITED STATES ARMOR

The following is a table of organization for a US Army Tank Company. Actual TO&E varied not only between services but within armored regiments as well. The following is a simplified scheme.

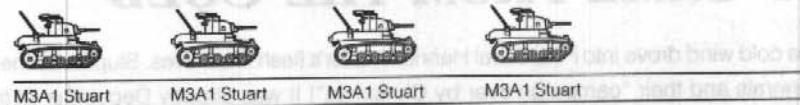
Armored Company



Platoon

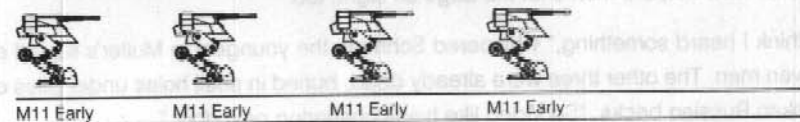


Light Tank Platoon/Reconnaissance

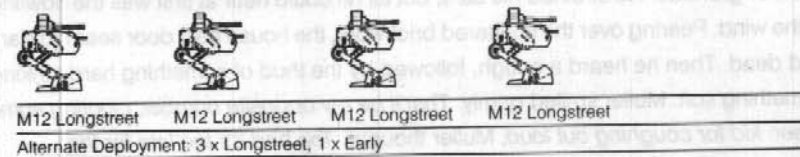


Walkers were organized in a similar fashion to tanks, although on a smaller organization level. They were either attached to armored regiments or directly as infantry assets.

Light/Reconnaissance Walker Platoon



Medium Walker Platoon





IT CAME FROM THE COLD

The cold wind drove into Feldwebel Henrich Muller's flesh like knives. Stupid damned generals and their "campaign over by Christmas"! It was already December 27th, and Muller's battalion of Panzergrenadiers was still bogged down in streetfighting in Moscow's western suburbs. Muller's squad had managed to advance a whole five houses up the street in the last day. The Bolsheviks fought like the trapped rats they were, but it was taking far too long to hunt them all down. Damned snipers were everywhere, like flies on trash. You couldn't even trust the dogs anymore, because the Bolsheviks had trained them to run under tanks with explosives strapped to their backs. Now Muller's men shot the dogs on sight, too.

"I think I heard something," whispered Schmidt, the youngest in Muller's squad of seven men. The other three were already dead, buried in shell holes under piles of broken Russian bricks. "Sounded like Ivans chattering next door."

Muller held up a hand for silence, not that his men were making much noise. In Moscow during the deadly winter of 1941 noisy behavior earned you a bullet, mortar shell, or grenade. He strained his ears, but all he could hear at first was the howling of the wind. Peering over the shattered brickwork, the house next door seemed dark and dead. Then he heard a cough, followed by the thud of something hard striking something soft. Muller smiled grimly. *That'll be my opposite number, clouting some green kid for coughing out loud*, Muller thought. *Too bad it's too late for that.*

Muller flashed hand signals to his men. They'd been at this long enough now to know the drill by heart. Slowly, they began crawling over the brickwork towards the wall of the next building. At a signal from Muller, as Schmidt and Dorffman flung stick grenades into the blown out windows, all the Germans fell flat.

The snowstorm was rent by the twin blasts of the grenades. The screams of the Russians could be heard over the ringing in Muller's ears, and yet he was the first man up and in the door, his MP40 at the ready. Sensing motion to his left, he spun and squeezed off a short burst. The Russian screamed and folded. Muller shot him again to make sure. Behind him, there were more screams as the rest of his men hunted the survivors of the grenade blasts through the rest of the house. Another minute or two, and it was all over. Dorffman stuck his head around the corner to signal Muller that the house was secured. The whole front of Dorffman's uniform was covered in blood. Dorffman liked using his bayonet in house clearing, because, he always joked, "It *never* jams!"

Muller moved slowly and quietly into the next room. Schmidt was peering into the snowy murk. He turned as he sensed Muller's approach. "We've made it to the corner, Feldwebel!" Schmidt crowed.

Before Muller could open his mouth to hiss the kid into silence, Schmidt's whole body heaved as a bullet hammered into his torso. He dropped like a puppet with its strings cut.

"Sniper!" bawled Dorffman, as the others all threw themselves flat. Muller looked over at Schmidt's body as he cowered behind the remains of the outer wall. How in hell did the sniper spot us in all this snow?

Schmidt's bloodied face looked up at Muller in mute accusation, as slowly, snowflakes began to land on his cooling corpse.

SCENARIOS

The following pages contain a selection of scenarios depicting a variety of incidents and battles from the first three years of the war. They are all fairly straightforward and can be used as an introduction to the game. Note that all of the scenarios have been designed for a standard 4'x6' area tabletop with miniatures ranging from 1/72 to 1/144. If smaller or larger scales are used, simply adjust the terrain correspondingly. Players are encouraged to experiment and change the scenarios and their victory conditions.

One look at any of the myriad history texts on World War II will provide thousands of ideas for possible scenarios. Not all battles were set piece affairs. Small actions were common, perhaps a clash of two patrols in the darkness, a raid on an unsuspecting ammo dump, an ambush on a supply column; the possibilities are limited only by one's imagination. As is often the case, Players can simply arrange their tabletop terrain to their mutual satisfaction and then just have at it.

Balancing the forces in presence may be a little arduous at first. The majority of forces on any side of a battle should be made up of the "mudfoot" regular troops. It may not be as glamorous or heroic, but it is more accurate, if one considers the amount of time training and expense that goes into creating elite formations. Threat Values can be used to create two equally powerful armies, or the Players can agree on the forces they will field. Often a "balanced" scenario will not result in this case, but real war is not a balanced affair either. Historically, commanders would not normally consider an attack on an enemy in prepared defensive positions unless they were sure of at least a 3:1 ratio of troops in their favor. Most preferred to have more. To keep the game entertaining, differences in forces can be balanced by interesting (and achievable) victory conditions.



• SCENARIO FORMAT

Mission Briefing: This section will "set the scene" providing the players with the historical context, and outlining the aims of both sides in the battle.

Mission Conditions: This section will detail the game scale and relevant environmental factors of the battle.

Mission Objectives: This section will lay out the specific goals of both forces in the battle.

Order of Battle: This section will list the units available to both sides.

Morale: This section will indicate the Morale Level of the combatant forces at the beginning of the battle.

Terrain and Setup: This section describes the tabletop terrain required to play the scenario, and the starting positions of the combatants.

Complications and Variations: This section is a list of optional variables that players can opt to introduce into each scenario to increase difficulty or to simply expand the size of forces involved.



THE BATTLE OF ARRAS

Battlefield

Location:	France, 21 May, 1940
Weather:	Clear
Time of Day:	Day

Order of Battle

GERMAN UNITS

4 x	squad of infantry	4 x	PzKpf IV Ausf B "Loki" walker
2 x	PzKpf V Ausf A "Valkurie" walker	2 x	PzKpfw Mk. II Ausf B1 tank
2 x	Pak 36 AT gun		

BRITISH UNITS

6 x	squad of infantry	6 x	Bren Universal Carrier
8 x	MVIII B Cavalier walker	2 x	Matilda Mk. II tank

MISSION BRIEFING

On the 21st of May 1940, British forces attempted to storm the German held heights of the Arras ridge. The Germans, under the command of General Erwin Rommel, had been given two days to prepare their positions. In spite of the valiant efforts of the British Cavalier walker pilots and the crews of the Royal Tank Corps, by the day's end, the British attack had been pushed back to its starting line. This was the first major engagement between two walker-equipped forces. Historically, the failure of the British to storm the ridge made it impossible to link up with the French army.

MISSION OBJECTIVES

The BEF's objective is to dislodge the Germans from their positions on the Arras ridge. Failure will mean that the BEF's position in France will no longer be tenable. A major victory will be achieved if the BEF can destroy all German units or force them to retreat. Because of the desperate situation, there is no way that a minor victory can help the BEF. The Germans will score a major victory if they can destroy all the British units within the first five turns. As long as the Wehrmacht maintains control of the ridge at the end of the game, the Germans will achieve a minor victory.

MORALE

All German units are Veteran, and all British units are Qualified. This is a Medium Mission Priority for both sides.

TERRAIN AND SETUP

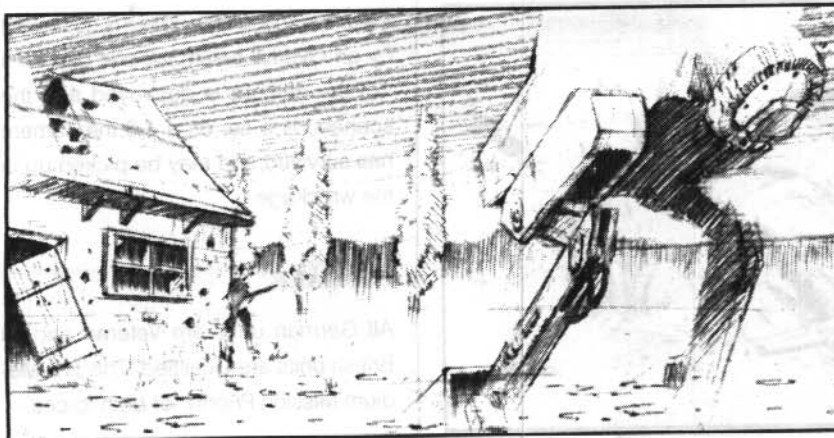
The German board edge should be dominated by the ridgeline position. The balance of the tabletop should be set up as open countryside — fields and woodlots, with the occasional farm building here and there.

The German forces are set up on the ridgeline, all AT guns and infantry are considered to be dug in, and all vehicles and walkers are treated as being hull down. The Germans set up first.

British units will enter on the first turn from the opposite board edge to the German positions. The British have the first turn. The British are treated as having two initiative Command Points for the first turn.

COMPLICATIONS AND VARIATIONS

- 1) Replace all Cavalier pilots with Veterans of the Coldstream Guards.
- 2) Add one 8.8 cm KWK AT gun to the German defenders. British forces should be increased by two Matildas. Historically, by the afternoon of the battle, Rommel did order his 88-mm Flak guns into action in a ground role against the British forces. The Germans had found that their Pak 37's were completely ineffective. Shells were just bouncing off the Matilda's heavy armor!
- 3) Add two PzKpfw III Ausf E tanks to Rommel's defenders and increase the British forces by four MVIII B Cavalier walkers.
- 4) Replace all British infantry squads with Veterans (level 2 Morale) of the Scots Guards.



REARGUARD ON THE ROAD TO DUNKIRK

Battlefield

Location:	France, May 25 - June 4, 1940
Weather:	Clear
Time of day:	Day

Order of Battle

GERMAN UNITS

4 x	squad of infantry	4 x	SdKfz 251b halftrack
2 x	PzKpf IV Ausf B "Loki" walker	4 x	PzKpf V Ausf A "Valkurie" walker
2 x	PzKpfw III Ausf E tank		

BRITISH UNITS

6 x	squad of infantry	2 x	MG team
1 x	Matilda Mk. II tank	4 x	MVIIIb Cavalier walker

MISSION BRIEFING

The British realized that the battle of France was now lost. The decision was therefore made by Churchill to evacuate the BEF from France. The withdrawal to the port of Dunkirk was made easier by the inexplicable actions of the German High Command, which halted the advance of its Panzer divisions on their march to the channel. It is believed that Reichsmarshal Goering had assured Hitler that the Luftwaffe alone could accomplish the destruction of the BEF and the French and Belgian troops who had fallen back on Dunkirk with them.

MISSION OBJECTIVES

The BEF rearguard is attempting to stall the approach of the German army. The British must hold the line; no German units can be permitted to exit the British table edge. The Wehrmacht was ordered to resume the attack on the Dunkirk perimeter. The Germans will score a minor victory if they can exit between 1-6 units off the British table edge, and a major victory if they can exit 7 or more units. The Germans have eight turns to accomplish this, after that, British reinforcements will arrive and stop the attempt at a breakthrough.

MORALE

All German units are Veteran and all British units are Qualified. This is a Medium Mission Priority for the German forces and a High Mission Priority for the British.

TERRAIN AND SETUP

An open country terrain would do fine here, perhaps with a road, and some wooded areas interspersed with pastures and tilled fields. One or two farm buildings and one or two hills, if available, would also be of use.

The British set up first, followed by the Germans.

The Germans take the first turn. Assume they have 2 Initiative Command Points to spend on turn 1.

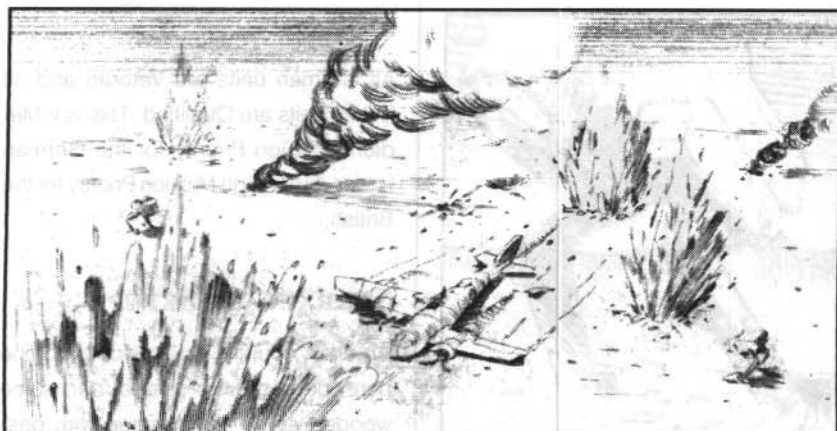
COMPLICATIONS AND VARIATIONS

1) Give the British two 2 Lb. AT Guns and increase the German forces by four PzKpf V Ausf B "Valkurie" walkers.

2) Give the British a second Matilda, and add a PzKpfw IV Ausf F and a PzKpfw II Ausf B1 to the Germans.

3) Give the British two 2 Lb. AT guns and increase the German forces by six PzKpf IV Ausf A "Loki" walkers.

4) Both armies had been travelling for weeks almost non-stop. Maintenance was suffering as a result of this. Treat all units as if they had the random shutdown Flaw at level 1. Any units already affected by this flaw increase their rating by 1.



If a unit carrying the camera is destroyed by an Overkill result, roll one die: on a 1-3 the camera is destroyed and the scenario is a tie, on a 4-6 the camera has survived and may be picked up in the wreckage.

MORALE

All German units are Veteran and all British units are Qualified. This is a Medium Mission Priority for both forces.

TERRAIN AND SETUP

This scenario does not require a lot of terrain. A tan colored groundsheet will do for the desert, one or two sand dunes and piles of rocks can also be added. The important thing is to mark the location of the wrecked aircraft. It should be placed in the center of the playing area. The camera's position can be marked by placing a counter on the location.

Neither side starts with any units on the table. Both forces will enter from their respective board edge as play commences. Roll normally to see who takes the first turn.

COMPLICATIONS AND VARIATIONS

1) Both sides had constant problems with a lack of fuel and a paucity of spare parts to effect repairs. Make a Random Shutdown check at Level 1 (unit will become immobilized on a roll of 2 on two dice) for each unit at the start of each turn.

2) The Trap: the Germans have already recovered the camera, and have now laid a trap for the British. Remove the PzKpfw II Ausf F tank from the German forces and replace it with two Pak 38 AT guns, which are considered to be dug in and may be set up anywhere within 6 MUs of the German board edge.

KNOWLEDGE IS OUR BEST WEAPON

Battlefield

Location:	North Africa, April 1941
Conditions:	Clear
Time of Day:	Afternoon

Order of Battle

GERMAN FORCES

3 x	PzKpf IV Ausf C "Loki" walker	3 x	PzKpf V Ausf B "Valkurie" walker
1 x	PzKpfw II Ausf F tank		

BRITISH FORCES

3 x	MVIIIIC Cavalier walker	3 x	MV12VA Roundhead walker
1 x	Mk. IV "Honey" light tank		

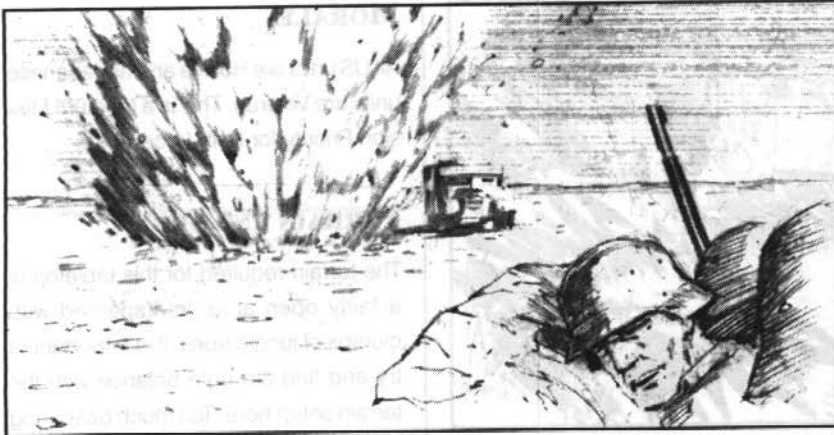
MISSION BRIEFING

On February 12th 1941, General Erwin Rommel arrived at the Italian controlled North African port of Tripoli, Libya. The Italians had been driven clear across the western desert by the British 8th army, and were desperate for help from their Teutonic allies. Their saviours lost little time in throwing themselves into the front lines in a savage counterattack on British positions. The battlefield was extremely fluid; armies changed their positions by distances of up to a hundred miles in a single day. Reconnaissance became of paramount importance.

MISSION OBJECTIVES

Both the British and the Germans have the same objective here: to recover the reconnaissance camera from a downed RAF observation plane. To do so, a unit must remain stationary in contact for one entire turn and cannot take any actions (the crew is getting the camera). The unit with the camera must then exit the map from a friendly map edge.

Note that it is possible to transfer the camera from one unit to another, following the same procedure as for picking up the camera from the wreck.



SUPPLY AND DEMAND

Battlefield

Location:	North Africa, May 1941
Conditions:	Clear
Time of Day:	Morning

Order of Battle

GERMAN FORCES

4 x	PzKpf IV Ausf C "Loki" walker	2 x	PzKpf V Ausf B "Valkurie" walker
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BRITISH FORCES

10 x	supply truck	3 x	MVIII B Cavalier walker
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MISSION BRIEFING

As the tides of battle seesawed back and forth across Libya, both the Afrikakorps and the Desert Rats became very adept (and some might say preoccupied) with raiding each other's lines of supply. Food, water, spare parts and gasoline were all worth their weight in gold. And denying their use to the enemy was a close second best to taking them for yourself.

MISSION OBJECTIVES

The Germans are attempting to seize a British supply convoy. The easiest way to do this is to eliminate the escorts and force the supply trucks to surrender. If, however, the trucks have to be de-

stroyed... enough supplies should be salvageable to make the attack worthwhile. The British are trying to ensure that the convoy makes it off the table without falling into German hands. The British will score a minor victory if they can get 1-5 trucks off of either short table edge, and a major victory, if they can exit 6-10.

MORALE

All German units are Veteran and all British units are Qualified. This is a Medium Mission Priority for both forces.

TERRAIN AND SETUP

A fairly simple desert terrain set up is all that is required here. Only one terrain

feature is truly important, that being either a road or track of some kind running lengthways along the middle of the table. This can be made of paper, felt, or even masking tape. Ambitious modelers, of course, will want to make something that looks better. Several companies make very nice road sets for wargaming use.

The Germans set up anywhere around the perimeter of the tabletop, within 8 MUs of the table edge.

The British set up the convoy on the road in the center of the table. The walker escorts may be placed within 6 MUs of any part of the convoy. The British set up first. Roll normally to see which force takes the first turn.

VARIATIONS AND COMPLICATIONS

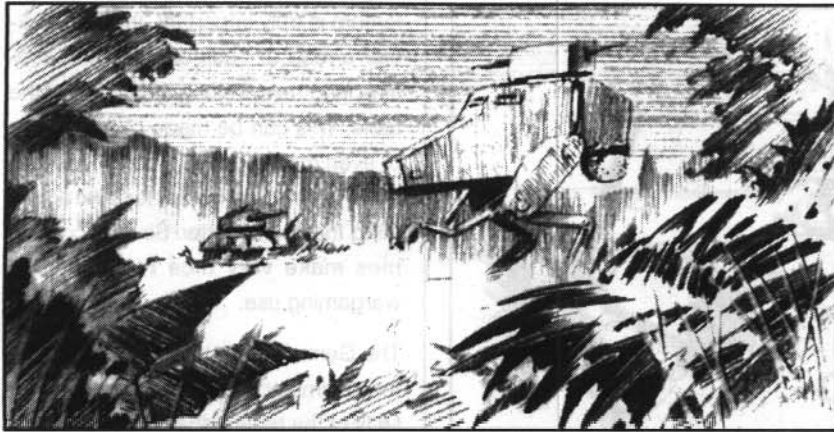
1) Sandstorm: On turn two a sandstorm begins blowing through the battle area, causing each MU to add 2 to its normal Obscurement value.

2) Armed Lorries: Three of the convoy trucks have had .30 cal. machineguns added.

3) Cavalry to the rescue! Add two Pzpfw II Ausf C tanks to the German force. On each British turn after the third, roll a die. If the number rolled is an even number, roll on the following table:

1)	2 x Mk. IV "Honey" tank
2)	2 x Crusader Mk. I tank
3)	3 x MVIII C Cavalier walker
4)	2 x Crusader Mk. II tank
5)	2 x M11A2 Longstreet walker
6)	2 x Crusader Mk. III tank

4) Turnabout: This scenario can easily be reversed. Change the convoy escort to three PzKpf IV Ausf B "Loki" walkers and the attacker to four MVIII C Cavalier and two MV12B Roundhead walkers.



BLOODY LUZON

Battlefield

Location:	Philippines, December 22, 1941
Conditions:	Clear
Time of Day:	Morning

Order of Battle

US FORCES

6 x	M3A1 Stuart light tank	3 x	M11A2 Early walker
1 x	M11A3 Early walker		

JAPANESE FORCES

12 x	Type 95 Ha-go tank	5 x	Shiki Type 38 walker
2 x	Shiki Type 41 walker		

MISSION BRIEFING

The fate of the Philippine Islands was settled well before the war, surrounded as they were by Japanese forces on all sides. The first armored engagement took place on December 22, when tanks and walkers of the 4th Regiment ambushed a patrol of M11 Early walkers and M3 light tanks from the 192nd Tank Battalion near Damortis. The patrol was part of a rearguard action, covering the withdrawing U.S. forces. After some skirmishing, the Americans fell back. The Provisional Tank Force lost many tanks needlessly in ill-conceived withdrawals, due mainly to inexperience with larger-scale armor and walker tactics.

MISSION OBJECTIVES

The Japanese forces must destroy all U.S. units. Failing that, they must drive them off their edge of the table. If less than half of the U.S. forces remain to retreat, it is a partial Japanese victory. If the entire U.S. force is destroyed it is a major Japanese victory.

The U.S. forces must try to inflict as many losses as possible in five turns. After that, they must begin to withdraw to their table edge. If more than half of their units exit their table edge and they have destroyed at least two enemy units, it is a minor U.S. victory. If the U.S. forces have managed to destroy or cripple more than half the Japanese units, it is a major victory.

MORALE

All US units are Rookie and all Japanese units are Veteran. This is a Medium Mission Priority for both forces.

TERRAIN AND SETUP

The terrain required for this tabletop is a fairly open area, interspersed with clumps of jungle trees. It is important to try and find the right balance with the terrain setup here. Too much obscuring terrain will not allow the US enough of a field of fire to be able to try to eliminate enough of the oncoming Japanese. Too little terrain to provide enough cover for the US defense will turn this scenario into a turkey shoot for the Japanese.

The US sets up first, within 12 MUs of their own long table edge. The Japanese do not set up on the table; they will enter on turn one from their long table edge. The Japanese have the first turn; assume they have two Initiative Command Points to spend on turn one.

MISSION VARIATIONS AND COMPLICATIONS

1) Japanese morale is very high, due to their victories thus far in the Pacific and due to the honor of having been chosen to spearhead the Luzon offensive. The Japanese forces have a High Mission Priority for Morale purposes.

2) The U.S. forces have had to scramble under the Japanese bombings and repeated attacks on their supplies. Spare parts must be stretched to their limit. Two M3 tanks and two M11 walkers will have the Random Shutdown Flaw (see page 98) at level 2. Determine which vehicles have this Flaw randomly after the scenario begins.



RUSSIA HAS BEEN BROKEN AND WILL NEVER RISE AGAIN!

Battlefield

Location:	Moscow, November 2 - December 31 1941
Conditions:	Blizzard (+2 Obscurement to all units)
Time of Day:	Afternoon

Order of Battle

RUSSIAN FORCES

6 x	squad of infantry	3 x	MG team
2 x	T34 tank		

GERMAN FORCES

12 x	squad of infantry	4 x	PzKpf IV Ausf C "Loki" walker
2 x	PzKpf V Ausf B "Valkurie" walker	1 x	Sturmgeschutz L/33 Ausf E tank

MISSION BRIEFING

It was the time of the Great Panic in Moscow. On November 2nd, the lead elements of the Wehrmacht's Army Group Center began its assault on the beleaguered city's western suburbs. German morale was being undermined by the terrible weather and the incredible doggedness of Russian resistance. Russian morale was bolstered by Stalin's daily radio broadcasts from the walls of the Kremlin, which he had refused to abandon. For those who were not heartened by the Great Stalin's rhetoric and appeals to nationalistic sentiment, there were always Beria's NKVD execution squads.

MISSION OBJECTIVES

The German objective is simple: eliminate all Red Army units in this area. This will result in a major victory for the Germans. There is no minor victory option; it is all or nothing.

Russian forces are determined to stop the "Hitlerite Invaders" and make them pay dearly for every meter of ground taken. If there are any Russian units left alive at the end of the battle, it is a Major victory for the Red Army. Note that the Russian +1 bonus to morale checks for being in a defensive position is counted in addition to the +2 bonus for the high mission motivation.

MORALE

All Russian units are Rookie, and all German units are Veteran. This is a Medium Priority mission for the Germans and a High Priority for the Russians.

TERRAIN AND SETUP

The terrain for this setup requires a large number of ruined buildings, piles of rubble, cratered roadways and shell craters. Try to arrange the terrain in such a manner as to allow the tanks some avenues of movement, but not too many.

The Russians set up first in the center of the table, within a 16-MU area of the playing area's center.

The Germans enter from any one of the four table edges on their first turn. The Germans have 12 turns to eliminate all Russian forces and achieve their victory.

Roll normally to see which side takes the first turn.

COMPLICATIONS AND VARIATIONS

1) Assume that the combat is taking place during a lull in the storm, and give the Russians a sniper. This negates the +2 Obscurement effect of the blizzard.

2) Reinforcement: Add two Lend-Lease M12A2 Longstreet walkers to the Russian forces. Also add two Lend-Lease MVIIB Cavalier walkers to the Russian forces.

3) Tired: The fighting in the streets of Moscow during the Blizzard of December 1941 was a horrific ordeal. Treat all units on both sides as being in an exhausted state. All Morale checks will be taken at -2.



PERKS

Many vehicles have special features, such as additional armor plates, ejection systems and cargo bays, that are not covered by the vehicles primary tactical and strategic statistics. These extra features are represented by Perks. Many Perks are primarily intended for background and campaign purposes and do not have significant tactical effects on the vehicle's direct combat performance.

Perks with the designation (AUX) are defined as Auxiliary Systems for combat and damage purposes.

Perks with the designation (R) have a numeric Rating. This Rating is listed next to the Perk's game effects on the data sheet.



AIRDROPABLE

The vehicle can be equipped with a parachute or an equivalent device that allows it to be dropped from high or low altitude onto a battlefield.

AMPHIBIOUS

The vehicle is adapted for occasional water travel such as river crossings and amphibious assaults. The lower hull is made water-proof, and inflatable skirts are sometimes added along with an underwater propulsion system such as a small propeller. The vehicle may travel across water terrain, paying MP according to its normal movement type. This Perk does not grant the vehicle submarine movement.

BATTLE ARM R

The vehicle has a rudimentary arm to carry and orient weapons or other pieces of equipment. While battle arms are not nimble at all, they can lift an object (provided it has been attached to the arm) whose Size score is equal to the arm's rating. No matter the rating of a battle arm, a vehicle cannot lift an item whose size is greater than twice its own size. If a vehicle has multiple arms, it can use these together to increase its lifting ability. Add half the ratings of the weaker arms to the full rating of the strongest arm to determine the lifting strength of multiple arms.

Some Battle Arms are designed to punch opponents: they end in a rein-

forced battering ram or other brawling weapon. This attack has a Damage Multiplier equal to the Rating of the arm.

BACKUP COMMUNICATIONS SYSTEM

The vehicle may ignore communications system damage effects of the first Auxiliary System Hit on the Systems Damage Table. All non-communication auxiliary systems take normal damage effects. The Perk's effect can be restored by a normal repair if a technician works on the vehicle after combat.

CARGO BAY

The vehicle has a cargo bay. Cargo bays are rated in terms of their volume in cubic meters. They are mostly used in campaign games or to ferry troops (each trooper takes up two cubic meters of space and counts as Exposed Crew).

FIRE RESISTANT

The vehicle is made of fire-resistant materials and provides adequate heat protection for the crew. In game terms, halve the Intensity of any incendiary attacks against the vehicle.

HEAT-RESISTANT ARMOR R

The vehicle's armored hull can dissipate the intense energy delivered by weapons like shaped-charge warheads and energy guns. It either has extra layer of spaced armor or sports an ablative coating of some sort.

The Rating of this Perk is added to the vehicle's base Armor Rating when the vehicle is attacked by HEAT-based weapons (see the table on top of the next page). This Perk has no effect versus weapons that are not HEAT-based.



HEAT EFFECT

HEAT-BASED NOT HEAT-BASED

Bazooka	Cannon
Mortar	
Rockets/Grenade	Rifle (infantry)
Missile	Punch and Kick
Panzerfaust	Ramming
PIAT	Melee Weapon

HIGH TOWING CAPABILITY

The vehicle is equipped with a high torque, heavy duty powerplant and a rugged transmission. Its towing capacity is doubled or tripled, depending on the design. See *Towing*, page 69.

IMPROVED OFF-ROAD ABILITY

The vehicle is designed to handle rough or rugged terrain even better than standard military grade vehicles. Ground vehicles have large wheels/treads with a very flexible suspension, walkers have large or clawed feet. In tactical game terms, the vehicle pays one less MP for any terrain type that requires more than one MP to cross. For instance, a ground vehicle with Improved Off-Road Ability would pay 3 MPs instead of 4 MPs when crossing Swamp hexes, but would still pay 1 MP (the minimum movement cost) per Clear or Sand MU.

HOSTILE ENVIRONMENT PROTECTION

The vehicle is specially designed for prolonged exposure to some hostile environmental conditions without detrimental effects. The following Perks also protect the crew.

Desert: The vehicle can withstand extended exposure to desert conditions without needing special maintenance to

avoid sand build-up. This Perk includes air filters, modified heat exchangers and cloth coverings on delicate mechanisms.

Extreme Cold: The vehicle is designed to endure freezing cold temperatures, such as those found in arctic and antarctic regions, without freezing up or otherwise breaking down. This Perk also protects the crew. Heaters, special lubricants and other modifications are part of this Perk.

MANIPULATOR ARM R

The vehicle has an arm that can pick up and manipulate objects. For example, handheld weapons can be dropped and picked up at will. The arm can lift an object whose Size score is equal to the arm's rating. No matter what the rating of a manipulator arm, a vehicle cannot lift an item whose Size is greater than twice its own Size. If a vehicle has multiple arms, it can use these together to increase its lifting ability. Add half the ratings of the weaker arms to the full rating of the strongest arm to determine the lifting strength of multiple arms.

Optionally, manipulator arms can be reinforced to punch opponents. This attack has a damage multiplier equal to the Rating of the arm.

PASSENGER SEATING

The vehicle has extra seats for passengers. The passengers do not confer any extra actions to the vehicle, nor can they control it. Passengers cannot use the vehicle crew's escape system (if any); they must have their own.

REINFORCED ARMOR R

The vehicle has one or more facings (defense arcs) with better armor than the

rest of the vehicle. When the vehicle is hit on a reinforced facing, add the Perk's Rating to the base Armor Rating of the vehicle.

REINFORCED CHASSIS

The frame of the vehicle is designed to absorb considerable punishment. The vehicle may ignore the first Structure hit on the Systems Damage Table, but then loses this Perk. The Perk's effect can be restored by a normal repair if a technician works on the vehicle after combat.

REINFORCED CREW COMPARTMENT

The crew compartment is layered with additional armor and fitted with crash-absorbing material. The vehicle may ignore the first Crew hit on the Systems Damage Table, but then loses this Perk. The Perk's effect can be restored by a normal repair if a technician works on the vehicle after combat.

REINFORCED LOCATION ARMOR R

One of the vehicle's location has better armor than the rest of the vehicle. When the vehicle is hit in a reinforced location, add the Rating of this Perk to the base Armor Rating of the vehicle before determining damage.

SEARCHLIGHT AUX

The vehicle has a powerful lighting system, such as banks of headlights or a large wide angle spotlight. At night, treat the vehicle's F (or Rt, L, or Rr, depending on where the searchlight is mounted) firing arc as if it were in daylight, up to the searchlight's maximum range.



SMOKE LAUNCHERS **AUX**

The vehicle has been equipped with a smoke grenade launcher system, which can be triggered using an Action. It provides 2 points of Obscurement to the firing vehicle in the arc where it is fired for the rest of the turn.

RUGGED MOVEMENT SYSTEMS

The vehicle may ignore the first Movement hit on the Systems Damage Table, but then loses this Perk. This protection is due to the inherent strength of the drive systems design, or any built-in redundancy. This Perk's effect can be restored by a normal repair if a technician works on the vehicle after combat.

TOOL ARM **R**

The vehicle has an arm with a specialized tool attachment, such as an earthmoving scoop or a cargo handling claw. While a tool arm is not as nimble as a manipulator arm, it can lift an object whose Size score is equal to the arm's Rating. No matter what the Rating of a tool arm, a vehicle cannot lift an item whose Size is greater than twice its own Size. If a vehicle has multiple arms, it can use these together to increase its lifting ability. Add half the ratings of the weaker arms to the full rating of the strongest arm to determine the lifting strength of multiple arms.

Optionally, tool arms can be designed to punch opponents. This attack has a Damage Multiplier equal to the Rating of the arm.

WEAPON LINK

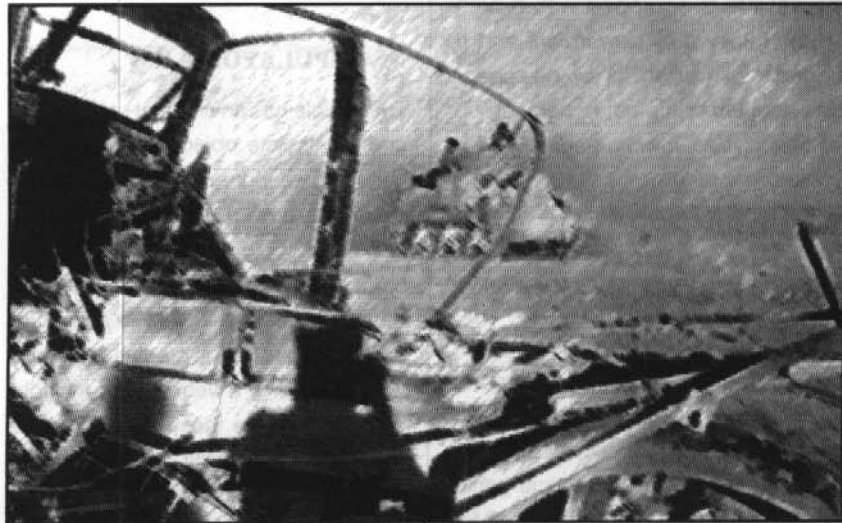
This Perk allows multiple weapons to be linked to one fire control mechanism simultaneously. One Action is required to

fire the weapon link. The link's Accuracy and Range are equal to the worst Accuracy and Range among the link's weapons. Each weapon attacks separately, but as soon as one weapon

misses all the other weapons not yet fired automatically miss (but still use their ammunition). When a link is fired, all of the weapons in the link fire.

FLAWS

Flaws are the opposite of Perks. Flaws represent defects or shortcomings in the vehicle's design. Sometimes these defects are planned as a cost-cutting measure, at other times the defects are the result of design or production errors.



ANNOYANCE

Annoyance includes unusual weird noises, bad smells, false alarm signals, a cramped cockpit, etc. Often, this Flaw has little or no tactical effect, but is interesting since it individualizes the various vehicle designs.

BRITTLE ARMOR

Due to poor design or materiel, or both, the vehicle loses twice the normal amount of Armor when it is damaged.

Light Damage hits remove two points of Armor, and Heavy Damage hits remove four. System Damage is otherwise applied normally.

BUTTONED UP

Because of the restricted field of view, an armored vehicle operating with all its crew hatches closed (the "buttoned up" position) must subtract 2 from all its Detection rolls. If the controlling Player announces the tank is running with hatches open, this Flaw is replaced by the Exposed Crew Compartment Flaw. (Few walkers have this Flaw; in general, their extra height compensates for the restricted field of vision.)

DEFECTIVE ACTIVE SENSORS **R**

Early sensor systems were very primitive and prone to damage. The vehicle's



sensor system has a tendency to go on the blink in a random manner. Defective Active Sensors are rated from 1 to 5. In combat, one die is rolled before attempting to obtain a line-of-sight through active sensors (see page 52). If the roll is equal to or less than the Rating, the Flaw's rating is applied as a negative modifier to the sensor test.

DEFECTIVE FIRE CONTROL R

The vehicle's fire control system has a tendency to go on the blink in a random manner. Defective Fire Control is rated from 1 to 5. In combat, one die is rolled just before firing a weapon. If the roll is equal to or less than the Rating, the Flaw's Rating is applied as a negative modifier to the attack.

EXPOSED AUXILIARY SYSTEMS

The vehicle's auxiliary systems have little protection from combat damage. Whenever an Auxiliary Systems hit is rolled on the Systems Damage Table (see page 59), the damage is one stage worse (i.e. Light Damage becomes Heavy, and Heavy Damage destroys all auxiliary systems).

EXPOSED FIRE CONTROL SYSTEMS

The vehicle's fire control mechanisms are inadequately protected and prone to damage or malfunctions. A +1 modifier is applied when rolling for damage on the Fire Control Damage Sub-table (see page 59).

EXPOSED CREW COMPARTMENT

The vehicle's crew compartment is open-topped or offers little protection, causing excessive crew casualties

whenever the vehicle is hit. Whenever a Crew hit is rolled on the Systems Damage Table (see page 59), the damage is one stage worse (i.e. Light Damage becomes Heavy, and Heavy Damage eliminates the entire crew).

EXPOSED MOVEMENT SYSTEM

The vehicle's movement systems have little protection from combat damage. Whenever a Movement Systems hit is rolled on the Systems Damage Table (see page 59), the damage is one stage worse (i.e. Light Damage becomes Heavy, and Heavy Damage disables all movement).

EXTREME OVERHEATING

The vehicle is prone to overheating in a highly dangerous manner. The vehicle will automatically suffer a random Light Damage hit if it does either of the following for two combat turns in a row: move and fire a weapon; fire three or more times. If it does either of these for three combat turns in a row, the vehicle suffers an automatic random Heavy Damage hit.

FRAGILE CHASSIS

The vehicle's chassis is overly fragile and is prone to damage. The weight of the vehicle is too great for the frame, weakening it, or it might just be a bad design. A +1 modifier is applied when rolling on the Structural Damage Sub-table (see page 59).

FUEL INEFFICIENT

The vehicle consumes twice as much fuel while operating at Top Speed as it normally would. Its Deployment Range is reduced by four kilometers for every kilometer covered at Top Speed.

HAZARDOUS AMMO/FUEL STORAGE

The vehicle's fuel tanks or ammunition bays are poorly designed. They are either placed in a prominent place, lightly armored, or both! A +2 modifier is added to Ammo/Fuel hit rolls when the Ammo/Fuel Hit result is obtained on the Fire Control Damage Sub-table (see page 59).

HIGHLY FLAMMABLE

The vehicle incorporates flammable materials, or it is extremely susceptible to excessive heat. The Intensity of all incendiary attacks against the vehicle is doubled.

INEFFICIENT CONTROLS

The vehicle's control mechanisms are complex, causing the crew to waste precious time in high stress situations. The number of crew bonus actions is reduced by one. If the crew drops to one, the remaining crewman can either drive or take actions, not do both.

LARGE SENSOR PROFILE R

A design flaw has made the vehicle highly visible to sensors. This may be caused by a variety of elements, such as a tall silhouette, a high infrared signature, noisy machinery or a significant radar trace. This Flaw's Rating is subtracted from the vehicle's Concealment value versus sensors.

NO COMMUNICATION

The vehicle is not equipped with any form of communication system. It cannot stay in contact with teammates over long distance and therefore cannot use Command Points unless it is within command distance (see page 44). The crew



cannot act as a spotter for indirect fire, nor can it accomplish any action requiring the presence of a communication system.

NO SENSORS

The vehicle has no built-in electronic sensors of any kind and may only detect opponents visually. It may not use the Active Sensor LOS rules.

OVERHEATING

The vehicle is prone to overheating in a dangerous manner. The vehicle will automatically suffer a Light Damage hit if it does any of the following for three combat turns in a row: move and fire a weapon, fire three or more weapons.

PARTIALLY EXPOSED CREW

Only part of the crew is protected by the vehicle's mass and armor. The other crewmen are riding in open-topped compartments and are exposed to enemy fire. The vehicle is considered to have the Exposed Crew Compartment Flaw until all exposed crewmembers have been eliminated. For example, a vehicle which has three crewmen in an enclosed cockpit and four gunners on open mounts will have the Exposed Crew Compartment Flaw until the four gunners are casualties.

POOR OFF-ROAD ABILITY

The vehicle has great difficulty negotiating rough terrain. This can be caused by a poorly designed suspension, tiny wheels or treads, narrow feet, etc. Whenever entering terrain that costs 2 or more MP (not including elevation changes), the MP cost of the MU is increased by 1. For example, a Rough MU will cost 3 MPs instead of 2, but a Clear MU will still cost 1 MP to cross.

POOR TOWING CAPABILITY

The vehicle's powerplant is too small for the vehicle's size or its transmission system is not up to the task of towing and overheats all the time. The vehicle's towing capacity is halved (see page 69).

RANDOM SHUTDOWN

Whenever strained (each turn of combat where it moved), the vehicle must roll two dice against a Threshold equal to one plus the rating of this Flaw. If failed, the vehicle shuts down (no movements or actions) for a number of combat turns equal to the roll of one die.

UNSTABLE

The vehicle is hard to control at high speed or in difficult terrain such as rough ground and urban areas. A -1 modifier is applied to all Driving Skill tests made at Top Speed and/or in terrain with a MP

cost greater than 1.

WEAK FACING

The vehicle has a weak facing (arc of defense). This may be due to incomplete armor coverage, shoddy design, or poor material. When the vehicle is attacked on that arc, its Armor is halved.

WEAK POINT

The vehicle has a weak point in the armor covering one of its locations. This may be due to incomplete armor coverage, shoddy design, or plain bad material. When a specific system/location is aimed at and successfully hit, the base Armor is reduced by the rating of this Flaw before applying damage.



WEAPON CHARACTERISTICS

All combat vehicles carry some sort of projectile or rocket weapons in battle. Many of these weapons have special qualities or effects that modify their performance in the tabletop game.



ADHESIVE

Adhesive ammunition is designed to stick to the target before detonating, increasing its possible damage.

It places a -1 modifier on the attack roll, but, if successful, the warhead becomes attached to the target. When it explodes one turn later, it counts as being in Point Blank range (+1) and the defender's defense roll is automatically zero.

To get rid of an adhesive warhead, the defender may make a Driving Skill roll versus the attack's Margin of Success. If the defending vehicle has manipulator arms, a bonus equal to half the Rating of the largest arm (rounded up) is applied to the Driving roll.

ANTI-INFANTRY

The weapon or warhead is specifically designed to attack infantry units and other man-sized targets. Anti-Infantry weapons can be swung around very fast or throw up lots of shrapnel.

These weapons do not suffer the normal -2 modifier when attacking infantry.

AREA EFFECT

The weapon affects a large area around the target point. This can be due to an explosive effect or a large number of scattered submunitions.

These weapons are rated in Area Effect (AE), followed by the MU radius of their blast area (radius 0 means only the target MU is affected). Area Effect weapons always have a minimum MoS of 1 versus everything in their radius, indiscriminate of friend or foe, even if the target(s) successfully defended.

Area Effect ammo delivers a high concussion blast and/or scatters lots of shrapnel around when it detonates. It gives the weapon an AE of 0, unless it

already has an Area Effect, in which case it adds one to the AE radius.

ARMOR-PIERCING

The weapon is highly efficient when penetrating armor, concentrating all its energy on a single point to enhance the force of the blow.

The target vehicle's base Armor Rating is halved to determine damage. If the attack is successful, the target does not lose any Armor points (the entry hole is too small to affect the Armor Rating) but takes System Damage as usual.

Targets may not be Overkilled by Armor-Piercing weapons. Any extra damage past the Overkill Armor Threshold of the target is ignored for simplicity.

Armor-piercing hits do not transfer between infantrymen; if an infantry squad is hit and takes damage, only one trooper is affected.

ARMOR-CRUSHING

The weapon is highly efficient when destroying armor plating and structures, either because of sheer striking power or because of its nature.

If the attack is successful, the target vehicle loses twice the usual Armor points (2 for Light Damage and 4 for Heavy Damage) in addition to the usual system damage.

If the damage point total of the attack is equal or greater than half the target's Armor (but still under the base Armor), the target loses one Armor point with no additional effect.

INCENDIARY

Incendiary weapons are intended to ignite and burn their targets. Most of the time, this is accomplished by filling the

shells with white phosphorus (or other, even more volatile compounds) or using burning liquid as projectile.

Incendiary weapons do not do damage normally; instead, they cause a fire whose Intensity is equal to the weapon's Damage Multiplier plus the attack's Margin of Success.

The full incendiary rules are fully described on page 67.

INDIRECT FIRE

The weapon can perform indirect fire, curving its attack to hit targets that are obscured by terrain.

The attacker does not need to have a direct line of sight in order to attack or otherwise affect the target, only a forward observer to tell him where to aim. The Indirect fire rules are fully described on page 56.

MINIMUM RANGE

The weapon is unable to fire at a target that is close to its position. It might be a mortar or an artillery piece that fires in a high arc.

In game terms, the weapon suffers a -1 modifier for each MU that the target is closer than the weapons Minimum Range Rating.

RECOIL

The weapon has enormous recoil and cannot be fired on the move. If this occurs, walker vehicles are knocked to the ground (roll Driving as per normal fall to avoid damage). Other vehicles may be overturned by the recoil. Roll one die: on a result of 1-4, the vehicle remains upright; on a 5-6, the vehicle is overturned and out of the fight.



Matilda Mk. II



Nationality: Great Britain
 Vehicle Type: Tank
 Year In Service: 1939

Size:	10	Crew:	4
Armor:	15/30/45	Movement:	Ground 2/4
Maneuver:	-3	Deployment Range:	150 km
Sensors:	None	Communications:	-1/3 km
Fire Control:	-2	Threat Value:	62

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Buttoned Up	-2 Detection or Exposed Crew	Inefficient Controls	-1 Bonus Action
Large Sensor Profile	-1 To Concealment		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
2 lb. Cannon	T	3	6	12	24	0	x8	1	67	-
.303 Besa MG	T	1	2	4	8	0	x2	1	4000	AI, ROF2

Crusader Mk. I/II



Nationality: Great Britain
 Vehicle Type: Tank
 Year In Service: 1939/1940

Size:	9	Crew:	4
Armor:	11/22/33	Movement:	Ground 2/4
Maneuver:	-2	Deployment Range:	150 km
Sensors:	None	Communications:	-1/3 km
Fire Control:	-2	Threat Value:	56

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Brittle Armor	Lose Twice Armor when Hit	Buttoned Up	-2 Detection or Exposed Crew
Inefficient Controls	-1 Bonus Action	Large Sensor Profile	-1 To Concealment
Random Shutdown	Rating 1; Roll For Shutdown		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
2 lb. Cannon	T	3	6	12	24	0	x8	1		110
7.92 mm MG	T	1	2	4	8	0	x2	1	-	AI, ROF2
7.92 mm MG	F	1	2	4	8	0	x2	1	-	AI, ROF2
MG Ammo Bin	-	-	-	-	-	-	-	-	4500	-

Crusader Mk. II: same as above except Maneuver -1, remove Forward Machinegun

Crusader Mk. III



Nationality: Great Britain
 Vehicle Type: Tank
 Year In Service: 1941

Size:	9	Crew:	3
Armor:	11/22/33	Movement:	Ground 2/4
Maneuver:	-2	Deployment Range:	150km
Sensors:	None	Communications:	-1/3 km
Fire Control:	-2	Threat Value:	64

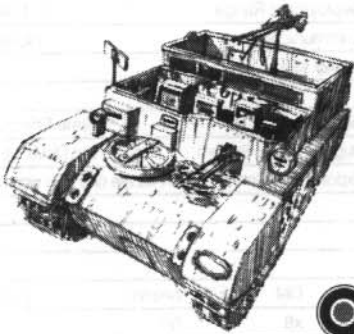
PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Brittle Armor	Lose Twice Armor when Hit	Buttoned Up	-2 Detection or Exposed Crew
Inefficient Controls	-1 Bonus Action	Large Sensor Profile	-1 To Concealment
Random Shutdown	Rating 1; Roll For Shutdown		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
6 lb. Cannon	T	4	8	16	32	0	x9	1		65
7.92 mm MG	T	1	2	4	8	0	x2	1	3375	AI, ROF2

Bren Carrier



Nationality: Great Britain
 Vehicle Type: Tracked APC
 Year In Service: 1940

Size:	5	Crew:	2
Armor:	5/10/15	Movement:	Ground 4/8
Maneuver:	-2	Deployment Range:	250 km
Sensors:	None	Communications:	None
Fire Control:	-2	Threat Value:	6

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Passenger Seating	Space for six troopers	Exposed Crew	Crew Hits are one Step Worse
Exposed Fire Control	FC Hits are one Step Worse	Inefficient Controls	-1 Bonus Action

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
.303 Bren MG	FF	1	2	4	8	0	x2	1	500	AI, ROF1

M3A1 Stuart/Mk. IV "Honey"



Nationality: USA/Great Britain
 Vehicle Type: Tank
 Year In Service: 1941

Size:	8	Crew:	4
Armor:	11/22/33	Movement:	Ground 3/5
Maneuver:	-3	Deployment Range:	160 km
Sensors:	None	Communication:	-1/5 km
Fire Control:	-2	Threat Value:	62

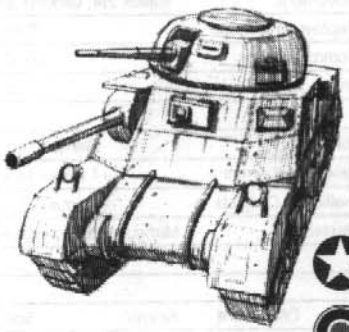
PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Reinforced Armor	+1 Armor Front	Buttoned Up	-2 Detection or Exposed Crew
Hazardous Ammo/Fuel	+2 to Ammo/Fuel Hit Rolls	Inefficient Controls	-1 Bonus Action
Large Sensor Profile	-1 To Concealment		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
M6 37 mm Gun	T	4	8	16	32	0	x8	1	113	-
.30 M1918 MG	T	1	2	4	8	0	x2	1	-	AI, ROF2
.30 M1918 MG	FF	1	2	4	8	0	x2	1	-	AI, ROF2
MG Ammo Bin	-	-	-	-	-	-	-	-	5150	-

M3A5 Grant/Lee



Nationality: USA/Great Britain
 Vehicle Type: Tank
 Year In Service: 1941

Size:	11	Crew:	6
Armor:	13/26/39	Movement:	Ground 3/5
Maneuver:	-3	Deployment Range:	160 km
Sensors:	None	Communications:	-1/5 km
Fire Control:	-2	Threat Value:	100

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Reinforced Armor	+1 Armor Front	Buttoned Up	-2 Detection or Exposed Crew
Hazardous Ammo/Fuel	+2 to Ammo/Fuel Hit Rolls	Inefficient Controls	-1 Bonus Action
Large Sensor Profile	-1 to Concealment		

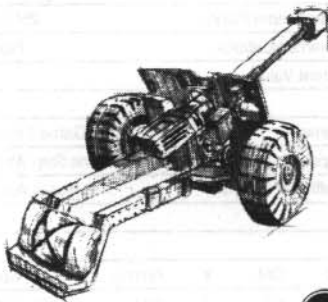
WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
M2 75 mm Cannon	FF	4	8	16	32	0	x11	1	46	-
M6 37 mm Cannon	T	4	8	16	32	0	x8	1	178	-
.30 M1918 A4 MG	T	1	2	4	8	0	x2	1	4600	AI, ROF2
.30 M1918 A4 MG	FF	1	2	4	8	0	x2	1	4600	AI, ROF2

U.S. Version (Grant): + 7 TV, same stats, add second .30 MG in Turret



2 Lb. AT Gun



Nationality: Great Britain
 Vehicle Type: AT Gun
 Year In Service: 1939

Size:	3	Crew:	3
Armor:	3/6/9	Movement:	Ground (Towed)
Maneuver:	-1	Deployment Range:	N/A
Sensors:	None	Communications:	None
Fire Control:	-2	Threat Value:	11

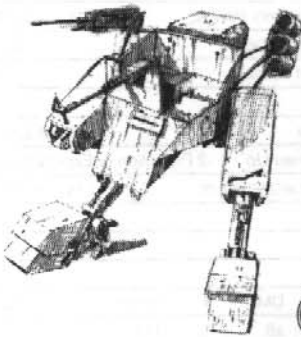
PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Reinforced Armor	+1 Armor Front	Rugged Move. System	Absorbs first Move. Hit
Exposed Crew	Crew Hits one step worse	Exposed Fire Control	FC Hits are one step worse

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
2lb. Cannon	FF	3	6	12	24	0	x8	1	60	-

MVIII Cavalier



Nationality: Great Britain
 Vehicle Type: Walker
 Year In Service: 1940

Size:	7	Crew:	2
Armor:	8/16/24	Movement:	Walker 2/4, Ground 3/5
Maneuver:	-1	Deployment Range:	70 km
Sensors:	None	Communication:	-2/1 km
Fire Control:	-1	Threat Value:	29

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Battle Arms	2 x R4, cannot punch	Decreased Maneuver	-1 Man. in Ground Mode
Exposed Crew	Crew Hits are one Step Worse	Inefficient Controls	-1 Bonus Action
Poor Towing	Half Capacity	Unstable	-1 Maneuver at Top Speed
Weak Point	-1 Armor on Movement Hits		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
Vickers HMG	FF	1	2	4	8	0	x4	1	150	AI, ROF1
Browning .30	F	1	2	4	8	0	x2	1	200	AI, ROF2
M40 Grenades	F	0	-	-	-	-1	x8	-	3	AI

MVIII B Cavalier



Nationality: Great Britain
 Vehicle Type: Walker
 Year In Service: 1940

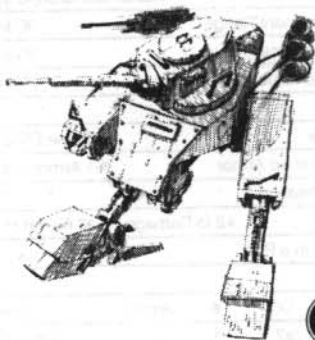
Size:	7	Crew:	2
Armor:	8/16/21	Movement:	Walker 2/4, Ground 3/5
Maneuver:	-1	Deployment Range:	70 km
Sensors:	None	Communication:	-2/1 km
Fire Control:	-1	Threat Value:	31

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Battle Arms	2 x R4, cannot punch	Reinforced Armor	+1 Armor Front
Decreased Maneuver	-1 Man. In Ground Mode	Inefficient Controls	-1 Bonus Action
Poor Towing	Half Capacity	Unstable	-1 Maneuver at Top Speed
Weak Point	-1 Armor on Movement Hits		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
Vickers HMG	F	1	2	4	8	0	x4	1	150	AI, ROF1
Browning .30	F	1	2	4	8	0	x2	1	200	AI, ROF2
M40 Grenade	F	0	-	-	-	-1	x8	-	3	AI

MVIII Cavalier

Nationality: Great Britain
 Vehicle Type: Walker
 Year In Service: 1941

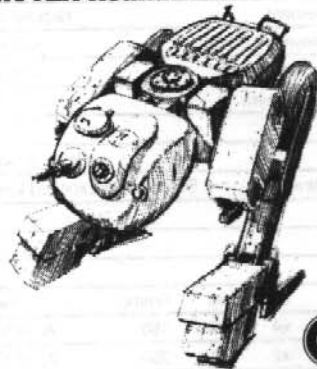
Size:	7	Crew:	2
Armor:	8/16/24	Movement:	Walker 2/4, Ground 3/5
Maneuver:	-1	Deployment Range:	70 km
Sensors:	None	Communications:	-2/2 km
Fire Control:	-1	Threat Value:	37

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Airdroppable	Can be airdropped	Manipulator Arms	2 x R4, Can Punch
Reinforced Armor	+1 Armor Front	Inefficient Controls	-1 Bonus Actions
Poor Towing	Half Capacity	Weak Point	-1 Armor on Movement Hits

WEAPONS

Name	Arc	S	M	L	Ex	Acc	Dam #	Ammo	Spec
1.2 Lb Cannon	F	2	4	8	16	0	x7	1 9	-
Browning .30	F	1	2	4	8	0	x2	1 200	AI, ROF2
M41 Grenades	F	0	-	-	-	-1	x9	- 3	AI

MV12A Roundhead

Nationality: Great Britain
 Vehicle Type: Walker
 Year In Service: 1941

Size:	7	Crew:	2
Armor:	9/18/27	Movement:	Walker 3/5, Ground 3/6
Maneuver:	-1	Deployment Range:	80 km
Sensors:	None	Communications:	-2/1 km
Fire Control:	-1	Threat Value:	40

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Manipulator Arms	2 x R4, Can Punch	Reinforced Armor	+1 Armor Front
Inefficient Controls	-1 Bonus Actions	Overheating	**
Weak Point	-1 Armor on Movement Hits		

**Light Damage if Unit Moves and Fires More Than 3 Turns in a Row

WEAPONS

Name	Arc	S	M	L	Ex	Acc	Dam	#	Ammo	Spec
M2A3 .50	F	1	2	4	8	0	x4	1 150	AI, ROF1	
Browning .30	F	1	2	4	8	0	x2	1 250	AI, ROF2	
M41 Grenades	F	0	-	-	-	-1	x9	- 3	AI	

MV12B Roundhead

Nationality: Great Britain
 Vehicle Type: Walker
 Year In Service: 1941

Size:	7	Crew:	2
Armor:	9/18/27	Movement:	Ground 3/5, Walker 3/6
Maneuver:	-1	Deployment Range:	80 km
Sensors:	None	Communications:	-2/3 km
Fire Control:	-1	Threat Value:	44

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Manipulator Arms	2 x R5, Can Punch	Reinforced Armor	+1 Armor Front
Overheating	**	Weak Point	-1 Armor on Movement Hits

**Light Damage if Unit Moves and Fires More Than 3 Turns in a Row

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
1.2 lb. Cannon	F	2	4	8	16	0	x7	1 9	-	
7.9 mm Besa	FF	1	2	8	8	0	x2	1 250	AI, ROF2	
M41 Grenades	F	0	-	-	-	-	x9	- 3	AI	



MV12C Roundhead



Nationality: Great Britain
 Vehicle Type: Walker
 Year In Service: 1941

Size:	7	Crew:	2
Armor:	9/18/27	Movement:	Walker 3/5, Ground 3/6
Maneuver:	-1	Deployment Range:	80 km
Sensors:	None	Communications:	-2/3 km
Fire Control:	-1	Threat Value:	46

PERKS & FLAWS

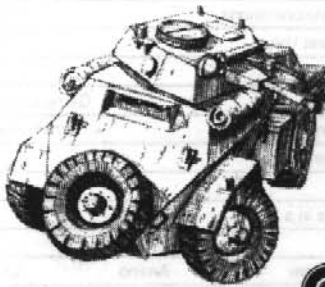
Name	Game Effects	Name	Game Effects
Manipulator Arms	2 x R5, Can Punch	Reinforced Armor	+1 Armor Front
Hazardous Ammo Storage	**	Overheating	***
Weak Point	-1 Armor on Movement Hits	**	+2 to Damage on all Ammo Hits

***Light Damage if Unit Moves and Fires More Than 3 Turns in a Row

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
Flamethrower	F	0	0	0	1	+1	x7	1	15	ROF1, SB
7.92 mm Besa	FF	1	2	4	8	0	x2	1	250	AI, ROF2
M41 Grenades	F	0	-	-	-	-	x9	-	3	AI

Humber MkII



Nationality: Great Britain
 Vehicle Type: Armored Car
 Year in Service: 1940

Size:	4	Crew:	3
Armor:	6/12/18	Movement:	Ground 4/6
Maneuver:	-2	Deployment Range:	402 km
Sensors:	None	Communications:	-1/5 km
Fire Control:	-2	Threat Value:	46

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Inefficient Controls	-1 Bonus Crew Action	Buttoned up	-2 Detection or Exposed Crew
Large Sensor Profile	-1 to Concealment		

WEAPONS

Name	Arc	S	M	L	EX	Acc	Dam	#	Ammo	Spec
15 mm Besa	T	1	2	4	8	0	x4	1	150	AI, ROF1
7.92 mm Besa	T	1	2	4	8	0	x2	1	250	AI, ROF2

T34/76A



Nationality: USSR
 Vehicle Type: Tank
 Year In Service: 1939

Size:	11	Crew:	4
Armor:	15/30/45	Movement:	Ground 2/4
Maneuver:	-3	Deployment Range:	260 km
Sensors:	None	Communications:	None
Fire Control:	-2	Threat Value:	96

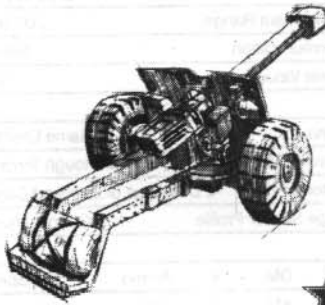
PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Hostile Environment Protection	Cold Weather	Improved Off Road	-1 MP cost in Rough Terrain
Buttoned Up	-2 Detection or Exposed Crew	Inefficient Controls	-1 Bonus Action
Large Sensor Profile	-1 to Concealment		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
76.2 mm Model 40	T	4	8	16	32	0	x12	1	77	-
7.62 mm MG	T	1	2	4	8	0	x2	1	-	AI, ROF2
7.62 mm MG	FF	1	2	4	8	0	x2	1	-	AI, ROF2
MG Ammo Bin	-	-	-	-	-	-	-	-	2898	-

45mm Model 39 AT Gun



Nationality: USSR
 Vehicle Type: Tank
 Year In Service: 1939

Size:	3	Crew:	3
Armor:	3/6/9	Movement:	Ground (Towed)
Maneuver:	-1	Deployment Range:	N/A
Sensors:	None	Communications:	None
Fire Control:	-2	Threat Value:	12

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Reinforced Armor	+2 Armor Front	Rugged Move. System	Absorbs first Move. Hit
Exposed Crew	Crew Hits are one Step Worse	Exposed Fire Control	FC Hits are one step worse

WEAPON

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
45 mm Model 39	FF	3	6	12	24	0	x9	1	50	-

T-44 "Nikolai Lenin"



Nationality: USSR
 Vehicle Type: Tank
 Year In Service: 1940

Size:	12	Crew:	7
Armor:	20/40/60	Movement:	Ground 2/4
Maneuver:	-4	Deployment Range:	80 km
Sensors:	None	Communications:	None
Fire Control:	-2	Threat Value:	113

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Hostile Environment Protection	Cold Weather	Improved Off Road	-1 MP cost in Rough Terrain
Reinforced Armor	+2 Armor Front	Buttoned Up	-2 Detection or Exposed Crew
Large Sensor Profile	-2 to Concealment	Overheating	
Inefficient Controls	-1 Bonus Action	Random Shutdown	R1, roll for shutdown
Weak Armor Facing	Rear Armor Halved		

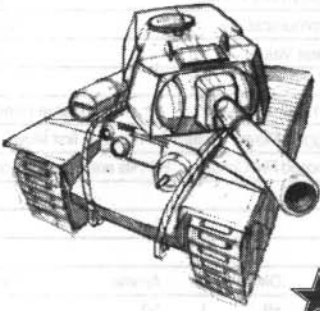
*Light Damage if Unit Moves and Fires More Than 3 Turns in a Row

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
76.2 mm Model 40	FF	4	8	16	32	0	x12	1	55	-
76.2 mm Model 40	FF	4	8	16	32	0	x12	1	55	-
45 mm Model 39	T	3	6	12	24	0	x9	1	50	-
7.62 mm MG	T	1	2	4	8	0	x2	1	-	AI, ROF2
7.62 mm MG	FF	1	2	4	8	0	x2	1	-	AI, ROF2
7.62 mm MG	Rt	1	2	4	8	0	x2	1	-	AI, ROF2
7.62 mm MG	L	1	2	4	8	0	x2	1	-	AI, ROF2
7.62 mm MG	Rr	1	2	4	8	0	x2	1	-	AI, ROF2
MG Ammo Bin	-	-	-	-	-	-	-	-	2000	-



KV-1C



Nationality: USSR
 Vehicle Type: Tank
 Year In Service: 1940

Size:	11	Crew:	5
Armor:	15/30/45	Movement:	Ground 2/4
Maneuver:	-3	Deployment Range:	200 km
Sensors:	None	Communication:	None
Fire Control:	-2	Threat Value:	93

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Hostile Environment Protection	Cold Weather	Improved Off Road	-1 MP cost in Rough Terrain
Reinforced Armor	+2 Armor Front	Buttoned Up	-2 Detection or Exposed Crew
Inefficient Controls	-1 Bonus Action	Large Sensor Profile	-1 To Concealment

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
76.2 mm Model 40	T	4	8	16	32	0	x12	1	111	-
7.62 mm MG	T	1	2	4	8	0	x2	1	-	AI, ROF2
7.62 mm MG	FF	1	2	4	8	0	x2	1	-	AI, ROF2
7.62 mm MG	R	1	2	4	8	0	x2	1	-	AI, ROF2
MG Ammo Bin	-	-	-	-	-	-	-	-	3024	-

BA-10 Armored Car



Nationality: USSR
 Vehicle Type: Armored Car
 Year in Service: 1937

Size:	5	Crew:	4
Armor:	7/14/21	Movement:	Ground 4/6
Maneuver:	-2	Deployment Range:	320 km
Sensors:	None	Communications:	None
Fire Control:	-2	Threat Value:	37

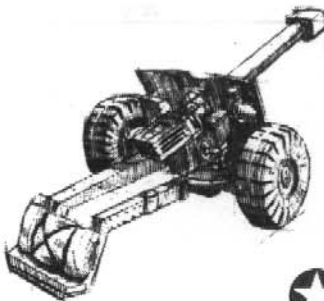
PERKS & FLAWS

Name	Game effects
Hostile Environment Prot.	Cold Weather
Improved Off-Road	-1 MP cost in Rough Terrain
Inefficient Controls	-1 Bonus Crew Action
Buttoned up	-2 Detection or Exposed Crew

WEAPONS

Name	Arc	S	M	L	EX	Acc	Dam	#	Ammo	Spec
45 mm Model 39	T	3	6	12	24	0	x9	1	50	-
7.62 mm DT	FF	1	2	4	8	0	x2	1	1500	AI, ROF2

M3A1 37mm AT Gun



Nationality: USA
 Vehicle Type: AT Gun
 Year In Service: 1938

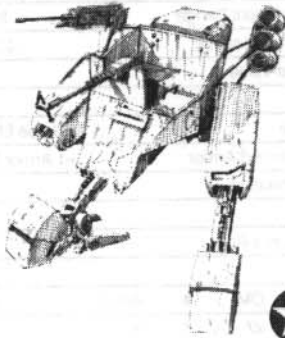
Size:	3	Crew:	3
Armor:	3/6/9	Movement:	Ground (Towed)
Maneuver:	-1	Deployment Range:	N/A
Sensors:	None	Communications:	None
Fire Control:	-1	Threat Value:	14

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Reinforced Armor	+2 Armor Front	Rugged Move. System	Absorbs first Move. Hit
Exposed Crew	Crew Hits are one Step Worse	Exposed Fire Control	FC Hits are one step worse

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
M3A1 37 mm	FF	4	8	16	32	0	x8	1	60	-

M11A1 General Early


Nationality:	USA
Vehicle Type:	Walker
Year In Service:	1939

Size:	7	Crew:	2
Armor:	8/16/32	Movement:	Walker 2/4, Ground 3/5
Maneuver:	-1	Deployment Range:	75 km
Sensors:	None	Communications:	-2/2 km
Fire Control:	-1	Threat Value:	29

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Battle Arms	2 x R4, Cannot Punch	Decreased Maneuver	-1 Man. in Ground Mode
Exposed Crew	Crew Hits are one Step Worse	Fuel Inefficient	x2 Fuel at Top Speed
Inefficient Controls	-1 Bonus Crew Action	Overheating	**
Poor Towing Capacity	-	Unstable	-1 Maneuver at Top Speed
Weak Point	-1 Armor on Movement Hits		

** Light Damage if Unit Moves and Fires More Than 3 Turns in a Row

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
M2A3 .50	FF	1	2	4	8	0	x4	1	150	AI, ROF1
M1918A4 .30	F	1	2	4	8	0	x2	1	200	AI, ROF2
Mk3W Grenades	F	0	-	-	-	-1	x8	-	3	AI

M11A2 General Early


Nationality:	USA
Vehicle Type:	Walker
Year In Service:	1940

Size:	7	Crew:	2
Armor:	8/16/32	Movement:	Walker 2/4, Ground 3/5
Maneuver:	-1	Deployment Range:	75 km
Sensors:	None	Communications:	-2/2 km
Fire Control:	-1	Threat Value:	31

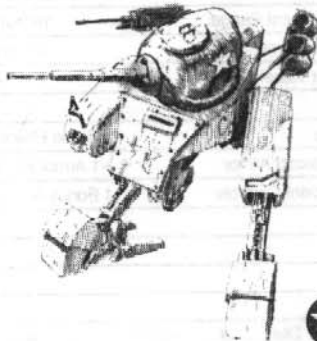
PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Battle Arms	2 x R4, Cannot Punch	Reinforced Armor	+1 Armor Front
Decreased Maneuver	-1 Man. in Ground Mode	Fuel Inefficient	x2 Fuel at Top Speed
Inefficient Controls	-1 Bonus Crew Action	Overheating	**
Poor Towing	Half Capacity	Unstable	-1 Maneuver at Top Speed
Weak Point	-1 Armor on Movement Hits		

** Light Damage if Unit Moves and Fires More Than 3 Turns in a Row

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
M2A3 .50	F	1	2	4	8	0	x4	1	150	AI, ROF1
M1918A4 .30	F	1	2	4	8	0	x2	1	200	AI, ROF2
Mk3W Grenades	F	0	-	-	-	-	x8	-	3	AI

M11A3 General Early


Nationality:	USA
Vehicle Type:	Walker
Year In Service:	1941

Size:	7	Crew:	2
Armor:	8/16/32	Movement:	Walker 2/4, Ground 3/5
Maneuver:	-1	Deployment Range:	75 km
Sensors:	None	Communications:	-2/3 km
Fire Control:	-1	Threat Value:	37

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Manipulator Arms	2 x R4, Can Punch	Reinforced Armor	+1 Armor Front
Glider Capable	Can deployed by glider	Decreased Maneuver	-1 Man. in Ground Mode
Fuel Inefficient	x2 Fuel at Top Speed	Inefficient Controls	-1 Bonus Action
Overheating	**	Poor Towing	Half Capacity
Weak Point	-1 Armor on Movement Hits		

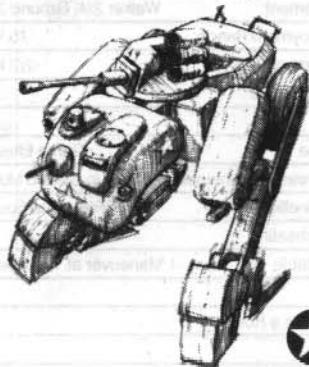
** Light Damage if Unit Moves and Fires More Than 3 Turns in a Row

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
M4B Cannon	F	2	4	8	16	0	x7	1	8	-
M1918A4 .30	F	1	2	4	8	0	x2	1	200	AI, ROF2
Mk4W Grenades	F	0	-	-	-	-	x9	-	3	AI



M12A1 General Longstreet



Nationality: USA
 Vehicle Type: Walker
 Year In Service: 1941

Size:	7	Crew:	2
Armor:	9/18/27	Movement:	Ground 3/5, Walker 3/6
Maneuver:	-1	Deployment Range:	85 km
Sensors:	None	Communications:	-2/3 km
Fire Control:	-1	Threat Value:	44

PERKS & FLAWS

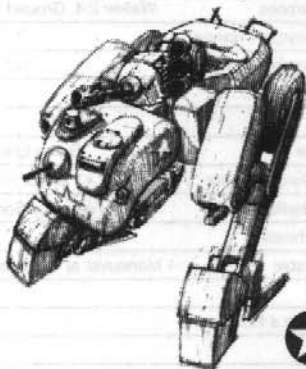
Name	Game Effects	Name	Game Effects
Manipulator Arms	2 x R4, Can Punch	Reinforced Armor	+1 Armor Front
Inefficient Controls	-1 Bonus Crew Action	Overheating	**
Weak Point	-1 Armor on Movement Hits		

** Light Damage if Unit Moves and Fires More Than 3 Turns in a Row

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
M4B Cannon	F	2	4	8	18	0	x7	1	9	-
M1918A5 .30	FF	1	2	8	8	0	x2	1	250	AI, ROF2
Mk4 Grenades	F	0	-	-	-	-	x9	-	3	AI

M12A2 General Longstreet



Nationality: USA
 Vehicle Type: Walker
 Year In Service: 1941

Size:	7	Crew:	2
Armor:	9/18/27	Movement:	Walker 3/5, Ground 3/6
Maneuver:	-1	Deployment Range:	85 km
Sensors:	None	Communications:	-2/3 km
Fire Control:	-1	Threat Value:	45

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Manipulator Arms	2 x R4, Can Punch	Reinforced Armor	+1 Armor Front
Inefficient Controls	-1 Bonus Crew Action	Overheating	**
Weak Point	-1 Armor on Movement Hits		

** Light Damage if Unit Moves and Fires More Than 3 Turns in a Row

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
Flamethrower	F	0	0	0	1	+1	x7	1	20	ROF1, SB
M1918A4 .30	FF	1	2	4	8	0	x2	1	250	AI, ROF2
Mk4 Grenades	F	0	-	-	-	-	x9	-	3	AI

PzKpfw II Ausf B1



Nationality: Germany
 Vehicle Type: Tank
 Year In Service: 1940

Size:	7	Crew:	3
Armor:	10/20/30	Movement:	Ground 3/5
Maneuver:	-3	Deployment Range:	160 km
Sensors:	None	Communications:	-1/5 km
Fire Control:	-2	Threat Value:	37

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Amphibious	Can wade in shallow water	Reinforced Armor	+1 Armor Front
Buttoned Up	-2 Detection or Exposed Crew	Inefficient Controls	-1 Bonus Action
Large Sensor Profile	-1 to Concealment		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
2cm KwK 30	T	3	6	12	24	0	x6	1	180	-
MG 34	T	1	2	4	8	0	x2	1	1425	AI, ROF2

PzKpfw II Ausf C



Nationality: German
 Vehicle Type: Tank
 Year In Service: 1941

Size:	7	Crew:	3
Armor:	10/20/30	Movement:	Ground 3/5
Maneuver:	-3	Deployment Range:	160 km
Sensors:	None	Communications:	-1/5 km
Fire Control:	-2	Threat Value:	37

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Reinforced Armor	+1 Armor Front	Buttoned Up	-2 Detection or Exposed Crew
Inefficient Controls	-1 Bonus Action	Large Sensor Profile	-1 to Concealment

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
2 cm KwK 30	T	3	6	12	24	0	x6	1	180	-
MG34	T	1	2	4	8	0	x2	1	1425	AI, ROF2

PzKpfw II Ausf D



Nationality: Germany
 Vehicle Type: Tank
 Year In Service: 1941

Size:	7	Crew:	3
Armor:	10/20/30	Movement:	Ground 3/6
Maneuver:	-3	Deployment Range:	160 km
Sensors:	None	Communications:	-1/5 km
Fire Control:	-2	Threat Value:	51

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Reinforced Armor	+1 Armor Front	Buttoned Up	-2 Detection or Exposed Crew
Inefficient Controls	-1 Bonus Action	Large Sensor Profile	-1 to Concealment

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
3.7 cm KwK 38	T	4	8	16	32	0	x7	1	180	-
MG 34	T	1	2	4	8	0	x2	1	1425	AI, ROF2

PzKpfw II Ausf E "Flamingo"



Nationality: German
 Vehicle Type: Tank
 Year In Service: 1941

Size:	7	Crew:	3
Armor:	10/20/30	Movement:	Ground 3/6
Maneuver:	-3	Deployment Range:	160 km
Sensors:	None	Communications:	-1/5 km
Fire Control:	-2	Threat Value:	27

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Reinforced Armor	+1 Armor Front	Buttoned Up	-2 Detection or Exposed Crew
Hazardous Ammo	+1 To Ammo/Fuel Hits	Inefficient Controls	-1 Bonus Action
Large Sensor Profile	-1 to Concealment		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
Flamethrower	FF	0	0	0	1	+1	x7	5	-	ROF1, SB
MG 34	T	1	2	4	8	0	x2	1	1425	AI, ROF2



PzKpfw II Ausf F



Nationality: German
 Vehicle Type: Tank
 Year In Service: 1941

Size:	7	Crew:	3
Armor:	10/20/30	Movement:	Ground 3/6
Maneuver:	-3	Deployment Range:	160 km
Sensors:	None	Communications:	-1/5 km
Fire Control:	-2	Threat Value:	51

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Reinforced Armor	+2 Armor Front	Buttoned Up	-2 Detection or Exposed Crew
Inefficient Controls	-1 Bonus Action	Large Sensor Profile	-1 to Concealment

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
3.7cm KwK 38	T	4	8	16	32	0	x7	1	180	-
MG 34	T	1	2	4	8	0	x2	1	1425	AI, ROF2

PzKpfw III Command



Nationality: German
 Vehicle Type: Tank
 Year In Service: 1940

Size:	10	Crew:	5
Armor:	14/28/42	Movement:	Ground 2/4
Maneuver:	-2	Deployment Range:	85 km
Sensors:	None	Communications:	-1/8 km
Fire Control:	-2	Threat Value:	45

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Buttoned Up	-2 Detection or Exposed Crew	Inefficient Controls	-1 Bonus Action
Large Sensor Profile	-1 to Concealment		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
MG 34	FF	1	2	4	8	0	x2	1	4950	AI, ROF2

PzKpfw III Ausf E



Nationality: German
 Vehicle Type: Tank
 Year In Service: 1940

Size:	10	Crew:	5
Armor:	14/28/42	Movement:	Ground 2/4
Maneuver:	-3	Deployment Range:	85 km
Sensors:	None	Communications:	-1/5 km
Fire Control:	-2	Threat Value:	51

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Buttoned Up	-2 Detection or Exposed Crew	Inefficient Controls	-1 Bonus Action
Large Sensor Profile	-1 to Concealment		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
3.7cm KwK 38	T	4	8	16	32	0	x8	1	80	-
MG34	T	1	2	4	8	0	x2	1	-	AI, ROF2
MG34	FF	1	2	4	8	0	x2	1	-	AI, ROF2
MG Ammo Bin	-	-	-	-	-	-	-	-	4950	-

Pzkpfw III Ausf F



Nationality: German
 Vehicle Type: Tank
 Year In Service: 1941

Size:	10	Crew:	5
Armor:	14/28/42	Movement:	Ground 2/4
Maneuver:	-3	Deployment Range:	85 km
Sensors:	None	Communications:	-1/5 km
Fire Control:	-2	Threat Value:	54

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Buttoned Up	-2 Detection or Exposed Crew	Inefficient Controls	-1 Bonus Action
Large Sensor Profile	-1 To Concealment		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
5 cm KwKL/42	T	4	8	16	32	0	x9	1	78	-
MG 34	T	1	2	4	8	0	x2	1	-	AI, ROF2
MG 34	FF	1	2	4	8	0	x2	1	-	AI, ROF2
MG Ammo Bin	-	-	-	-	-	-	-	-	4950	-

Pzkpfw III Ausf J



Nationality: German
 Vehicle Type: Tank
 Year In Service: 1941

Size:	10	Crew:	5
Armor:	14/28/42	Movement:	Ground 2/4
Maneuver:	-3	Deployment Range:	85 km
Sensors:	None	Communications:	None
Fire Control:	-2	Threat Value:	95

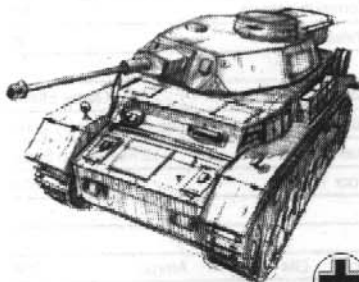
PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Buttoned Up	-2 Detection or Exposed Crew	Inefficient Controls	-1 Bonus Action
Large Sensor Profile	-1 To Concealment		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
5cm KwK L/60	T	5	10	20	30	0	x9	1	78	-
MG 34	T	1	2	4	8	0	x2	1	-	AI, ROF2
MG 34	FF	1	2	4	8	0	x2	1	-	AI, ROF2
MG Ammo Bin	-	-	-	-	-	-	-	-	4950	-

Pzkpfw IV Ausf F



Nationality: German
 Vehicle Type: Tank
 Year In Service: 1940

Size:	10	Crew:	5
Armor:	14/28/42	Movement:	Ground 3/5
Maneuver:	-3	Deployment Range:	125 km
Sensors:	None	Communications:	-1/5 km
Fire Control:	-2	Threat Value:	87

PERKS & FLAWS

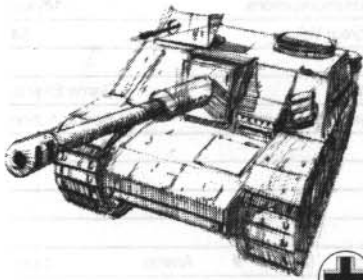
Name	Game Effects	Name	Game Effects
Reinforced Armor	+2 Armor Front	Buttoned Up	-2 Detection or Exposed Crew
Inefficient Controls	-1 Bonus Action	Large Sensor Profile	-1 to Concealment

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
7.5 cm KWKL/24	T	4	8	16	24	0	x11	1	87	-
MG 34	T	1	2	4	8	0	x2	1	-	AI, ROF2
MG 34	FF	1	2	4	8	0	x2	1	-	AI, ROF2
MG Ammo Bin	-	-	-	-	-	-	-	-	3150	-



Sturmgeschutz L/33 E



Nationality: German
 Vehicle Type: Tank
 Year In Service: 1941

Size:	10	Crew:	4
Armor:	14/28/42	Movement:	Ground 2/4
Maneuver:	-3	Deployment Range:	95 km
Sensors:	None	Communications:	-1/5 km
Fire Control:	-2	Threat Value:	48

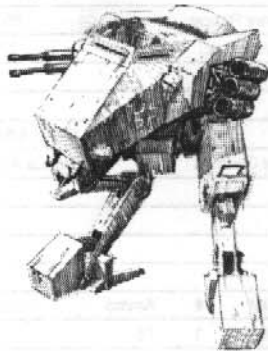
PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Reinforced Armor	+ 1 Armor Front	Buttoned Up	-2 Detection or Exposed Crew
Inefficient Controls	-1 Bonus Action	Large Sensor Profile	-1 to Concealment

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
7.5cm KwK L33	FF	3	6	12	24	0	x11	1	78	-

Pzkpf IV Aust A "Loki"



Nationality: German
 Vehicle Type: Walker
 Year In Service: 1938

Size:	6	Crew:	2
Armor:	7/14/21	Movement:	Walker 2/4, Ground 3/5
Maneuver:	-1	Deployment Range:	65 km
Sensors:	None	Communications:	-2/2km
Fire Control:	-1	Threat Value:	23

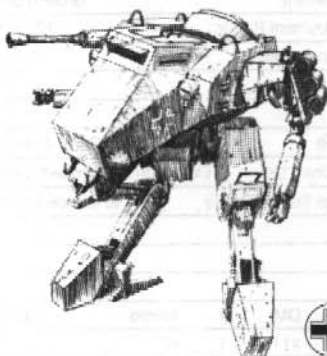
PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Battle Arms	2 x R4, Cannot Punch	Fuel Inefficient	x2 Fuel at Top Speed
Decreased Maneuver	-1 Man. in Ground Mode	Poor Towing	Half Capacity
Weak Point	-1 Armor on Movement Hits	Inefficient Controls	-1 Bonus Crew Action
Unstable	-1 Maneuver at Top Speed	Random Shutdown	R1
Exposed Crew	Crew Hits are one Step Worse		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
MG 38	FF	1	2	4	8	0	x2	2	-	AI, ROF2
MG Ammo Bin	-	-	-	-	-	-	-	-	500	-
Grenades	F	-	-	-	-	-1	x8	-	3	AI

Pzkpf IV Aust B "Loki"



Nationality: Germany
 Vehicle Type: Walker
 Year In Service: 1940

Size:	6	Crew:	2
Armor:	7/14/21	Movement:	Walker 2/4, Ground 3/5
Maneuver:	-1	Deployment Range:	65 km
Sensors:	None	Communications:	-2/2 km
Fire Control:	-1	Threat Value:	29

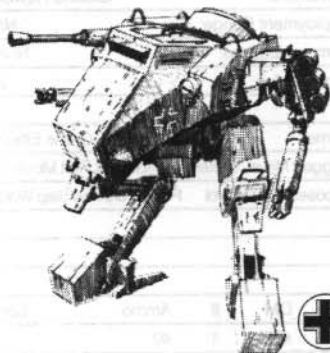
PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Manipulator Arms	2 x R4, Can Punch	Glider Capable	Can be deployed by glider
Decreased Maneuver	-1 Man. in Ground Mode	Fuel Inefficient	x2 Fuel at Top Speed
Inefficient Controls	-1 Bonus Action	Poor Towing	Half Capacity
Weak Point	-1 Armor on Movement Hits		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
1.8 cm KwK 77	F	2	4	8	16	0	x5	1	20	-
MG 38	FF	1	2	4	8	0	x2	1	250	AI, ROF2
Grenades	F	-	-	-	-	-1	x9	-	3	AI

Note: Remove Glider Capable and replace with Amphibious Perk for proposed invasion of Great Britain (Operation Seelöwe)

Pzkpf IV Ausf C "Lokr"


Nationality: German
 Vehicle Type: Walker
 Year In Service: 1941

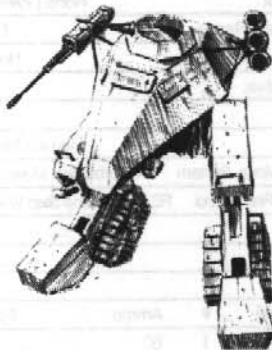
Size:	6	Crew:	2
Armor:	7/14/21	Movement:	Walker 2/4, Ground 3/5
Maneuver:	-1	Deployment Range:	65 km
Sensors:	None	Communications:	-2/2 km
Fire Control:	-1	Threat Value:	31

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Glider Capable	Can be deployed by glider	Manipulator Arms	2 x R4, Can Punch
Reinforced Armor	+1 Armor Front	Decreased Maneuver	-1 Man. in Ground Mode
Inefficient Controls	-1 Bonus Crew Action	Poor Towing	Half Capacity
Weak Point	-1 Armor on Movement Hits		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
1.8 cm KwK 77	F	2	4	8	16	0	x5	1	20	-
MG 38	FF	1	2	4	8	0	x2	1	250	AI, ROF2
Grenades	F	-	-	-	-	-1	x9	-	3	AI

Pzkpf V Ausf A "Valkurie"


Nationality: Germany
 Vehicle Type: Walker
 Year In Service: 1940

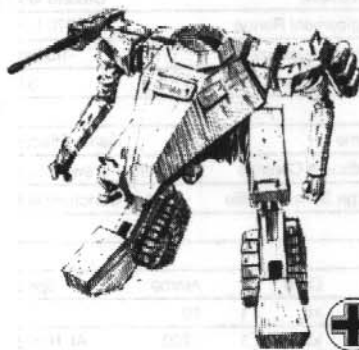
Size:	7	Crew:	2
Armor:	8/16/24	Movement:	Walker 2/4, Ground 3/5
Maneuver:	-1	Deployment Range:	60 km
Sensors:	None	Communications:	-2/2 km
Fire Control:	-1	Threat Value:	27

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Battle Arms	2 x R4, Can Punch	Reinforced Armor	+1 Armor Front
Poor Towing	Half Capacity	Random Shutdown	R1
Unstable	-1 Maneuver at Top Speed	Weak Point	-1 Armor on Movement Hits
Inefficient Controls	-1 Bonus Actions		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
MG 38	F	1	2	8	16	0	x2	2	-	AI, ROF2
MG Ammo Bin	-	-	-	-	-	-	-	-	500	-
Grenades	F	-	-	-	-	-1	x9	-	3	AI

Pzkpf V Ausf B "Valkurie"


Nationality: Germany
 Vehicle Type: Walker
 Year In Service: 1941

Size:	7	Crew:	2
Armor:	8/16/24	Movement:	Walker 2/4, Ground 3/5
Maneuver:	-1	Deployment Range:	60 km
Sensors:	None	Communications:	-2/2 km
Fire Control:	-1	Threat Value:	33

PERKS & FLAWS

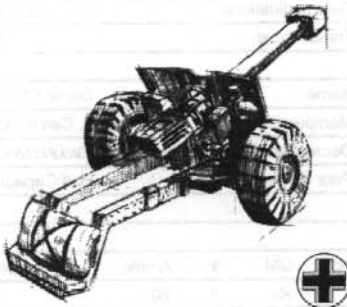
Name	Game Effects	Name	Game Effects
Manipulator Arms	2 x R5, Can Punch	Glider Capable	Can be deployed by glider
Reinforced Armor	+1 Armor Front	Poor Towing	Half Capacity
Random Shutdown	Rating 1; Roll For Shutdown	Weak Point	-1 Armor on Movement Hits
Inefficient Controls	-1 Bonus Action		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
1.8 cm KwK 77	F	2	4	8	16	0	x5	1	20	-
MG 38	FF	1	2	4	8	0	x2	1	250	AI, ROF2
Grenades	F	-	-	-	-	-1	x9	-	3	AI



Pak 40 AT Gun



Nationality: German
 Vehicle Type: AT Gun (Medium)
 Year In Service: 1936

Size:	4	Crew:	3
Armor:	4/8/12	Movement:	Ground (Towed)
Maneuver:	-1	Deployment Range:	N/A
Sensors:	None	Communications:	None
Fire Control:	-2	Threat Value:	21

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Reinforced Armor	+2 Armor Front	Rugged Move. System	Absorbs First Move. Hit
Exposed Crew	Crew Hits are one Step Worse	Exposed Fire Control	FC Hits are one Step Worse

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
7.5 cm Pak 40	FF	4	8	16	32	0	x12	1	40	-

8.8cm KWK AT Gun



Nationality: German
 Vehicle Type: AT Gun (Heavy)
 Year In Service: 1938

Size:	5	Crew:	5
Armor:	5/10/15	Movement:	None (Towed)
Maneuver:	-1	Deployment Range:	N/A
Sensors:	None	Communications:	None
Fire Control:	-2	Threat Value:	62

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Reinforced Armor	+2 Armor Front	Rugged Move. System	Absorbs First Move. Hit
Exposed Crew	Crew Hits are one Step Worse	Exposed Fire Control	FC Hits are one Step Worse

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
8.8 cm KWK	FF	7	14	28	56	0	x16	1	60	-

SdKfz 231 (8-Rad)



Nationality: German
 Vehicle Type: Armored Car
 Year In Service: 1939

Size:	5	Crew:	4
Armor:	8/16/24	Movement:	Ground 4/6
Maneuver:	-2	Deployment Range:	270 km
Sensors:	None	Communications:	-1/5 km
Fire Control:	-2	Threat Value:	31

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Reinforced Armor	+1 Armor Front	Inefficient Controls	-1 Bonus Crew Action
Buttoned up	-2 Detection or Exposed Crew	Large Sensor Profile	-1 to Concealment

WEAPONS

Name	Arc	S	M	L	EX	Acc	Dam	#	Ammo	Spec
2 cm KwK 30	T	3	6	12	24	0	x6	1	80	-
MG 34	T	1	2	4	8	0	x2	1	1200	AI, ROF2

Sdkfz 251b


Nationality: German
 Vehicle Type: Halftrack
 Year In Service: 1940

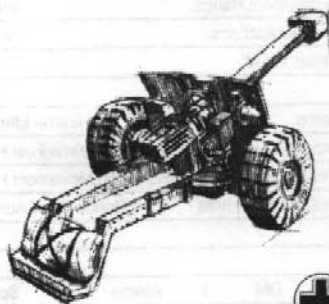
Size:	6	Crew:	2
Armor:	7/14/21	Movement:	Ground 3/5
Maneuver:	-3	Deployment Range:	300 km
Sensors:	None	Communications:	-1/3 km
Fire Control:	-2	Threat Value:	12

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Passenger Seating	Space for ten troopers	Exposed Crew	Crew Hits are one Step Worse
Exposed Fire Control	FC Hits are one Step Worse	Inefficient Controls	-1 Bonus Action
Large Sensor Profile	-1 to Concealment		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
MG 34	F	1	2	4	8	0	x2	1	1200	AI, ROF2

Pak 36 Anti-Tank Gun


Nationality: German
 Vehicle Type: AT Gun (Light)
 Year In Service: 1936

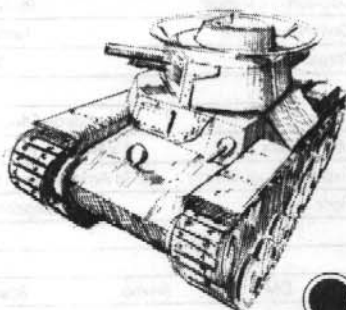
Size:	3	Crew:	3
Armor:	3/6/9	Movement:	Ground (Towed)
Maneuver:	-1	Deployment Range:	N/A
Sensors:	None	Communications:	None
Fire Control:	-2	Threat Value:	14

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Reinforced Armor	+2 Armor Front	Rugged Move. System	Absorbs First Move. Hit
Exposed Crew	Crew Hits are one Step Worse	Exposed Fire Control	FC Hits are one Step Worse

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
3.7 cm PAK 36	FF	4	8	16	32	0	x8	1	60	-

Type 95 "Ha-Go"


Nationality: Japanese
 Vehicle Type: Tank
 Year In Service: 1935

Size:	7	Crew:	3
Armor:	10/20/30	Movement:	Ground 4/8
Maneuver:	-3	Deployment Range:	170 km
Sensors:	None	Communications:	None
Fire Control:	-2	Threat Value:	38

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Buttoned Up	-2 Detection or Exposed Crew	Inefficient Controls	-1 Bonus Action
Large Sensor Profile	-1 to Concealment		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
37 mm Type 94	T	2	4	8	16	0	x7	1	130	-
7.7 mm Type 97	T	1	2	4	8	0	x2	1	-	AI, ROF2
7.7 mm Type 97	FF	1	2	4	8	0	x2	1	-	AI, ROF2
MG Ammo Bin	-	-	-	-	-	-	-	-	2970	-



Type 97 "Chi-Ha"



Nationality: Japanese
 Vehicle Type: Tank
 Year In Service: 1941

Size:	8	Crew:	5
Armor:	11/22/33	Movement:	Ground 4/7
Maneuver:	-2	Deployment Range:	200 km
Sensors:	None	Communications:	None
Fire Control:	-2	Threat Value:	70

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Buttoned Up	-2 Detection or Exposed Crew	Inefficient Controls	-1 Bonus Action
Large Sensor Profile	-1 to Concealment		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
47 mm Type 1	T	4	8	16	32	0	x10	1	104	-
7.7 mm Type 97	T	1	2	4	8	0	x2	1	-	AI, ROF2
7.7 mm Type 97	FF	1	2	4	8	0	x2	1	-	AI, ROF2
MG Ammo Bin	-	-	-	-	-	-	-	-	2575	-

Shiki 38



Nationality: Japan
 Vehicle Type: Walker
 Year In Service: 1938

Size:	6	Crew:	2
Armor:	8/16/24	Movement:	Walker 2/4, Ground 3/5
Maneuver:	-1	Deployment Range:	95km
Sensors:	None	Communications:	None
Fire Control:	-1	Threat Value:	30

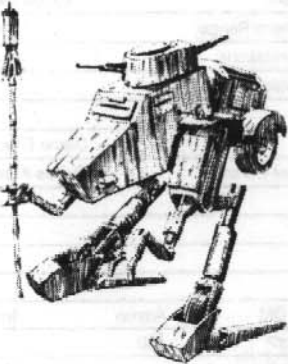
PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Manipulator Arms	2 x R4, Can Punch	Exposed Fuel Supply	+2 on Ammo/Fuel Hits
Poor Towing	Half Capacity	Weak Point	-1 Armor on Movement Hits
Unstable	-1 Maneuver at Top Speed	Inefficient Controls	-1 Bonus Crew Action

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
Teppoyari	F	-	-	-	-	0	x12	-	1	-
7.7 mm Type 97	F	1	2	4	8	0	x2	1	100	AI, ROF2
7.7 mm Type 97	R	1	2	4	8	0	x2	1	100	AI, ROF2
Grenades	F	-	-	-	-	-1	x9	-	3	AI

Shiki 41



Nationality: Japan
 Vehicle Type: Walker
 Year In Service: 1941

Size:	6	Crew:	2
Armor:	8/16/24	Movement:	Walker 2/4, Ground 3/5
Maneuver:	-1	Deployment Range:	95 km
Sensors:	None	Communications:	None
Fire Control:	-1	Threat Value:	32

PERKS & FLAWS

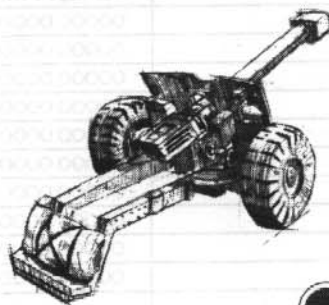
Name	Game Effects	Name	Game Effects
Amphibious		Manipulator Arms	2 x R4, Can Punch
Reinforced Armor	+1 Armor Front	Exposed Fuel Supply	+2 To Ammo/Fuel Hits
Inefficient Controls	-1 Bonus Crew Action	Poor Towing	Half Capacity
Weak Point	-1 Armor on Movement Hits		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
Teppoyari	F	-	-	-	-	0	x12	-	1	1
7.7 mm Type 97	F	1	2	4	8	0	x2	1	100	AI, ROF2
7.7 mm Type 97	R	1	2	4	8	0	x2	1	100	AI, ROF2
Grenades	F	-	-	-	-	-1	x9	-	3	AI



Model 94 Anti-Tank Gun



Nationality: Japanese
 Vehicle Type: AT Gun
 Year In Service: 1936

Size:	3	Crew:	3
Armor:	3/6/9	Movement:	Ground (Towed)
Maneuver:	-1	Deployment Range:	N/A
Sensors:	None	Communications:	None
Fire Control:	-2	Threat Value:	14

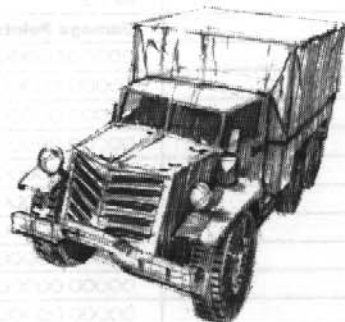
PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Reinforced Armor	+2 Armor Front	Rugged Move. System	Absorbs First Move. Hit
Exposed Crew	Crew Hits are one Step Worse	Exposed Fire Control	FC Hits are one Step Worse

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
Model 94	FF	4	8	16	32	0	x8	1	60	-

Truck



Nationality: Various
 Vehicle Type: Wheeled
 Year In Service: 1939

Size:	5	Crew:	2
Armor:	5/10/15	Movement:	Ground 4/8
Maneuver:	-3	Deployment Range:	180 km
Sensors:	None	Communications:	None
Fire Control:	-3	Threat Value:	5

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Cargo Bay	16 m ² , Open Topped	Exposed Crew	Crew Hits are one Step Worse
Inefficient Controls	-1 Bonus Action	Poor Off-Road Ability	**

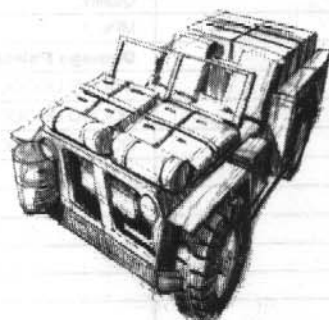
** +1 MP cost to terrain other than Road or Clear

WEAPONS

Usually none, but for +5 TV the truck can be equipped with a cab-mounted machinegun.

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
.30 Machinegun	F	1	2	4	8	0	x2	1	200	AI, ROF2

Small Scout Car (Jeep, etc.)



Nationality: Various
 Vehicle Type: Wheeled
 Year In Service: 1940

Size:	4	Crew:	2
Armor:	4/8/12	Movement:	Ground 4/8
Maneuver:	-1	Deployment Range:	130 km
Sensors:	None	Communications:	None
Fire Control:	-3	Threat Value:	5

PERKS & FLAWS

Name	Game Effects	Name	Game Effects
Passenger Seating	Space for three troopers	Exposed Crew	Crew Hits are one Step Worse
Exposed Fire Control	FC Hits are one Step Worse		

WEAPONS

Name	Arc	S	M	L	Ex	Acc	DM	#	Ammo	Spec
LMG	F	1	2	4	8	0	x2	1	300	AI, ROF2



Unit Name: Rifle Squad		
Affiliation: German		Quality:
Movement Mode: Foot		MPs: 2
#	Weapon	Damage Points
(1)	SMG	00000 00000
2	Rifle	00000 00000
3	Rifle	00000 00000
4	Rifle	00000 00000
5	Rifle	00000 00000
6	Rifle	00000 00000
7	Rifle	00000 00000
8	Rifle	00000 00000
9	LMG	00000 00000

Unit Name: Rifle Squad		
Affiliation: Soviet Russia		Quality:
Movement Mode: Foot		MPs: 2
#	Weapon	Damage Points
(1)	SMG	00000 00000
2	Rifle	00000 00000
3	Rifle	00000 00000
4	Rifle	00000 00000
5	Rifle	00000 00000
6	Rifle	00000 00000
7	Rifle	00000 00000
8	Rifle	00000 00000
9	Rifle	00000 00000
10	LMG	00000 00000

Unit Name: Rifle Section		
Affiliation: British		Quality:
Movement Mode: Foot		MPs: 2
#	Weapon	Damage Points
(1)	SMG	00000 00000
2	LMG	00000 00000
3	Loader	00000 00000
4	Loader	00000 00000
5	Rifle	00000 00000
6	Rifle	00000 00000
7	Rifle	00000 00000
8	Rifle	00000 00000
9	Rifle	00000 00000
10	Rifle	00000 00000

Unit Name: Rifle Squad		
Affiliation: U.S.A.		Quality:
Movement Mode: Foot		MPs: 2
#	Weapon	Damage Points
(1)	Rifle	00000 00000
2	Rifle	00000 00000
3	Rifle	00000 00000
4	Rifle	00000 00000
5	Rifle	00000 00000
6	Rifle	00000 00000
7	Rifle	00000 00000
8	Rifle	00000 00000
9	Rifle	00000 00000
10	Rifle	00000 00000
11	Rifle	00000 00000
12	LMG	00000 00000

Unit Name: Rifle Squad		
Affiliation: Japan		Quality:
Movement Mode: Foot		MPs: 2
#	Weapon	Damage Points
(1)	Rifle	00000 00000
2	Rifle	00000 00000
3	Rifle	00000 00000
4	Rifle	00000 00000
5	Rifle	00000 00000
6	Rifle	00000 00000
7	Rifle	00000 00000
8	Rifle	00000 00000
9	Rifle	00000 00000
10	Rifle	00000 00000
11	Rifle	00000 00000
12	Rifle	00000 00000
13	Rifle	00000 00000
14	LMG	00000 00000

Unit Name: Light Machinegun Team		
Affiliation:		Quality:
Movement Mode: Foot		MPs: 2
#	Weapon	Damage Points
1	LMG	00000 00000
2	SMG	00000 00000
3	SMG	00000 00000



Unit Name:		
Affiliation:		Quality:
Movement Mode:		MPs:
#	Weapon	Damage Points
1		00000 00000
2		00000 00000
3		00000 00000
4		00000 00000
5		00000 00000
6		00000 00000
7		00000 00000
8		00000 00000
9		00000 00000
10		00000 00000
11		00000 00000
12		00000 00000
13		00000 00000
14		00000 00000
15		00000 00000

Unit Name:		
Affiliation:		Quality:
Movement Mode:		MPs:
#	Weapon	Damage Points
1		00000 00000
2		00000 00000
3		00000 00000
4		00000 00000
5		00000 00000
6		00000 00000
7		00000 00000
8		00000 00000
9		00000 00000
10		00000 00000
11		00000 00000
12		00000 00000
13		00000 00000
14		00000 00000
15		00000 00000

Unit Name:		
Affiliation:		Quality:
Movement Mode:		MPs:
#	Weapon	Damage Points
1		00000 00000
2		00000 00000
3		00000 00000
4		00000 00000
5		00000 00000
6		00000 00000
7		00000 00000
8		00000 00000
9		00000 00000
10		00000 00000
11		00000 00000
12		00000 00000
13		00000 00000
14		00000 00000
15		00000 00000

Unit Name:		
Affiliation:		Quality:
Movement Mode:		MPs:
#	Weapon	Damage Points
1		00000 00000
2		00000 00000
3		00000 00000
4		00000 00000
5		00000 00000
6		00000 00000
7		00000 00000
8		00000 00000
9		00000 00000
10		00000 00000
11		00000 00000
12		00000 00000
13		00000 00000
14		00000 00000
15		00000 00000

Unit Name:		
Affiliation:		Quality:
Movement Mode:		MPs:
#	Weapon	Damage Points
1		00000 00000
2		00000 00000
3		00000 00000
4		00000 00000
5		00000 00000
6		00000 00000
7		00000 00000
8		00000 00000
9		00000 00000
10		00000 00000
11		00000 00000
12		00000 00000
13		00000 00000
14		00000 00000
15		00000 00000

Unit Name:		
Affiliation:		Quality:
Movement Mode:		MPs:
#	Weapon	Damage Points
1		00000 00000
2		00000 00000
3		00000 00000
4		00000 00000
5		00000 00000
6		00000 00000
7		00000 00000
8		00000 00000
9		00000 00000
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11		00000 00000
12		00000 00000
13		00000 00000
14		00000 00000
15		00000 00000

APPENDIX III: MINIATURES

The Gear Krieg rules support most existing wargaming scales (see *Game Scale*, page 44). You can play with virtually any type of W.W.II miniatures available on the market. Most are made out of pewter or resin; these are the most common materials for wargaming miniatures because they do not require extensive industrial facilities. They also have the advantage of being cast in soft molds, allowing more complex parts to be made.

You can also use plastic models of W.W.II tanks and infantry units: the armor section of the local hobby shop will yield many inexpensive kits suitable for gaming and conversion. Even toy soldiers (the infamous "army men") can be used in a pinch!

Individuals can be represented on the tabletop, although infantry squads will definitely be cumbersome if the players wish to represent every single trooper. About one in five will do fine: simply attach two trooper figures to a base (for ease of handling). Vehicles do not need bases, but are easier to manipulate if they have one.

A wide range of buildings and accessories are available from the armor modeling and model railroading industries, in scale ranging from the common 1/35 all the way down to the tiny 1/300. With a bit of time and a well-stocked spare parts box, these kits can be made into superb scenery for any Gear Krieg game.



WORK SURFACE

If you do not have access to a workbench, you should get a flat, smooth board about two feet long and one-and-a-half feet wide. An Arborite or hard wood plank will do just fine. If you have limited space, the board can be stored vertically; alternatively, screw two metal "eyes" on one side and hang it on the closet wall between sessions.

Your work area should always be kept tidy, clean, and well-organized. This will make it easier to keep track of both miniature parts and tools.

It is vital that it be well lit; the best light source, bar none, is the sun. If a window is not available, make sure that you have plenty of good illumination that is comfortable. If not, the lack of light will be very liring to your eyes.

TOOLS OF THE TRADE

You will need tools to assemble and paint your models properly. Some tools are costly, but if properly cared for they will last for many years.

Modeling tools can be kept in drawers or old kit boxes, but it is better to have a dedicated toolbox. A fishing tackle box, with multiple drawers and storage compartments, is perfect to store all your tools and spare parts.

The following tools are those that you will find most useful:

- Hobby Knife with Spare Blades
- Small Scissors
- Tweezers
- Coarse Sandpaper (medium)
- Sandpaper (fine and extra-fine)
- Needle Files
- Pin Vise and Drill Bits
- Clamps
- Pliers
- Toothpicks
- Paintbrushes

Safety First

When talking about tools one must talk about safety. Remember that any tool capable of cutting through plastic and metal is doubly capable of cutting through flesh!

When using a cutting tool, make sure you cut away from yourself to avoid accidents. A dull blade will be harder to control and require more pressure to cut, increasing the chances of slipping and causing injuries, so be sure the blade is very sharp.

Don't forget that many of the paints and glues used for modeling are toxic to some degree. Do not breathe the fumes and be sure to work in a well-ventilated area.

ASSEMBLY PREPARATION

Game miniatures are sold in sealed plastic blisters or bags. Don't rip the blisters open — parts are loose and you do not want them flying off! Take the parts and place them in an orderly fashion on your work surface. Check if all parts are present and accounted for, and if any have been damaged during transit. Bent parts can be easily straightened.

Decide how you are going to assemble the miniature. Most of the time, it is a very straightforward process of gluing together a couple of pieces. Some of the larger or more complex miniatures or models, however, may need a little bit of planning, else you will find it very difficult to glue or paint certain sub-assemblies later!

Small parts are attached to a piece of material called sprue. Do not twist the parts off the sprues — it may damage them. Use a pair of small cutters and don't cut too close to the pieces. You can always come back with a hobby knife or a file later to remove the little bit of sprue remaining on the miniature. You can also use the hobby knife directly, but be careful not to apply too much pressure to avoid the part (or the blade) flying off.

Once the part is free, remove any flash or mold lines by gently scraping it off with the knife or a file, then lightly sand until you are satisfied with the finish. Repeat for each new part, paying special attention to small detail pieces.

GLUE

If your miniature is made of pewter or resin, you will need either cyanocrylate (CA) or two-part epoxy glue to assemble it. CA glue is better known as superglue. It bonds just about anything very strongly (including flesh), but the bonds

formed are weak unless the mating surfaces are clean, absolutely dry and fit well. CA glue is best applied with a small toothpick. The better the fit between the parts to be joined, the stronger the bond. Be extremely careful when working with CA glue. It will glue anything that comes into contact with it, including skin. Cyanocrylate contains some minute quantity of cyanide, which is a toxic compound. Use it in a well-ventilated area and don't breathe the fumes. Never, ever heat it to make it cure faster.

The term "epoxy glue" covers a variety of adhesive resins that are cured by a chemical reaction instead of evaporation. Most epoxies come as a two-part set that must be mixed in equal proportions, yielding a strong and nearly universal glue. They require a few minutes to set, making them perfect for assembling variable position parts.

If the miniature is made of plastic both the above glues will work, but it is much easier to use plastic model glue. This type of glue is actually a plastic solvent which "welds" the parts together (so it will not work on pewter, resin or anything else). It comes in both tube and liquid form; the latter usually does a better job, though it requires more careful handling.

ASSEMBLING PEWTER PARTS

Metal requires the use of either CA or epoxy glue for assembly. Start by cleaning all the parts, removing flash and mold lines. Assemble the parts without glue to see how they fit together. Cut, file and bend where necessary to improve the fit. Some parts may be left off for painting to make the job easier. If this is the case, make sure the joint won't be too apparent afterward, since you won't be able to apply putty on the painted surfaces.

ASSEMBLING RESIN PARTS

Glue the parts together according to the instruction sheet. Although most miniatures can be assembled as is, it may be necessary to put metal pins between the larger parts for additional structural strength. A pair of wire cutters will be needed, along with a length of 1 or 2 mm metal wire and a drill bit corresponding to the diameter of the wire. Drill a hole for the metal rod in both parts, then cut a short length of metal wire and glue it in. Leave the smaller parts off to simplify painting.

PUTTY AND GAP-FILLING

Gaps may appear where the parts meet. Putty is a malleable substance that hardens when it dries. Putty comes in small, squeezable tubes, and several brands are available at your local hobby store. Apply the putty with a toothpick — just enough to fill the gap — and let it dry before sanding off the excess. Model putty takes forever to dry when applied in thick coats.

The structural strength of regular model putty is somewhat poor. If you have to build up a large area, two-part epoxy putty is a better choice. Epoxy putty consist of two bars of different colors that must be mixed in equal proportions. The putty will adhere to almost any surface, so work it with damp tools. Always wash your hands and your tools immediately afterwards.

If the gap to be filled is in a detail-dense area of the miniature, apply strips of masking tape on either sides of the gap to prevent the putty from filling in the detail. Remove the tape once sanding is done. You could also work the putty with sculpting tools, blending it into the miniature.

PAINTING

Painting makes the miniature come to life. Without paint, a miniature will just look like a toy.

The importance of a clean, well-lit and ventilated workplace cannot be stressed enough. The sun provides the best light, but a good work lamp will do too. Your tools (paint bottles, brushes, thinner, paper towels, etc.) should be tidy, organized and within easy reach. Make sure the work surface is protected by old newspapers or a similar material. The work area should be clean and dust-free. A comfortable environment will make everything easier and will lead to better enjoyment of your modeling sessions.

PAINTS

You'll need three paintbrushes: a flat size 8 for large surfaces, a round size 4 for small surface and a round size 0 for detailing. Smaller brushes exist, but their usefulness is limited because the paint tends to dry in the bristles before being applied. A size 0 brush with a nice, pointed end will do just as good a job. The tips should be smooth and end in a fine point. A good brush is costly, so be careful what you buy. Brushes are available at hobby and game shops.

You will need some paints to color your miniature. The basic tool kit should include the following colors: black, white, red, green, yellow, blue, and brown. It is advisable to have some military colors as well, such as Panzer Gray, Olive Drab and a few more. More specialized colors like silver, gold, and flesh can also prove useful. Because of their chemistry, different paint types (enamels, acrylics, and others) cannot be mixed with one another. Mixing different brands of the same type is not recommended.

Acrylics: Logically, these are the best choice. They are easy to use and use water or isopropyl alcohol (rubbing alcohol) as thinner. Acrylics become impervious to water once they dry. They are also easily shaded and have a mat satiny finish.

Enamels: Cover very well, are thin and do not obscure fine detail much. Enamels are very volatile and smell terrible since they use turpentine (mineral spirit) as a diluent and suspension agent.

Oil Paints: These are the paints found in tubes at the local art stores. They are not really suitable for modeling.

Lacquers: Lacquer paints are mostly used for railroad modeling, since they look very realistic. Lacquer chemistry is even smellier, more reactive and more toxic than enamel's.

DRYBRUSHING

Drybrushing is perhaps the single most useful painting technique for the military modeler. It allows you to quickly highlight the various details on the miniature's hull without spending hours touching up each and every bolt. An old, broad paintbrush is needed; the technique is somewhat brutal on brushes, so it's a good idea not to use the very best one as they will wear out fast.

First, paint the miniature in its overall color(s) and let dry thoroughly. Take a slightly lighter shade of the base color of the vehicle and put a drop of it on a piece of paper. Wait until most of the solvent has been absorbed by the paper, then take the dry brush and lightly run it across the paint so that it will pick up a minute amount of pigment. Lightly run the brush across the miniature, paying special attention to the top surface. The raised details will pick up minute amounts of paint, which will "light" them

up. It is easy to overdo, so go slowly at first — you can always add more later. If you are patient, you can even highlight each camouflaged color separately for an even better effect.

VARNISHES

After painting, a light coat of clear varnish will help protect the miniature from all the handling it will receive during game sessions. Varnishes come as liquid or spray-can. Avoid gloss varnish: while it provides excellent protection for your miniature, its shiny appearance completely removes the illusion of scale. If you're concerned about having a neat, clean finish, use semi-gloss instead, or put a flat coat on top of gloss. The best finish for military miniatures is flat.

Let the final coat of paint dry thoroughly before applying the varnish. About three days should be enough.

DECALS AND MARKINGS

A nice finishing touch on a miniature is carefully applied decals. These are transparent films mounted on a backing paper sheet. Each marking should be cut out from the sheet as close to the edge as possible. The miniature's surface must be clean and dry. Dip each marking in water for about thirty seconds — don't put them all in at the same time, though, the glue will dissolve before you've had the chance to place them!

Using tweezers, place the damp decal over its intended spot. Carefully slide it into place — don't try to lift it from the backing sheet, you'll rip it apart. Once you are satisfied with the decal's position, use a dry cloth to absorb the excess water. Don't rub, just tap, or you will damage the decal. Once dry, seal the decals in with another thin coat of varnish. The miniature is complete!

THE PLAYING FIELD

Though Gear Krieg can be played with counters on a flat map, the game only really comes alive on a decorated tabletop fought over with miniatures. The playing field can be very detailed or very simple. The choice depends on the preferences and resources of the players. There are three general categories of terrain: simple, moderate and full-blown. Which one is used has no effect on the game mechanics themselves as long as the terrain types (Clear, Rough, Woodland, etc.) are clearly identified and their boundaries delineated.



THE SIMPLE BATTLEFIELD

This is the bare floor or table top, with maybe a few pieces of furniture or some boxes to represent elevations, cover or obstacles. Each box can have a Damage Point Capacity like a building or it can be considered indestructible, if it represents a hill, for example. Certain areas of ground, like a carpet or tile, can be designated as a specific type of terrain, or a piece of string can be used to mark its boundaries.

This type of background is well suited for quick skirmish games or scenarios taking place in the mostly flat deserts of North Africa. It is quick to set up and takes no storage space between game sessions, but it is somewhat visually unappealing and will require lots of imagination.

THE MODERATE BATTLEFIELD

This background is made with a big piece of canvas or a sheet covering books piled to form the elevations, with some simple cardboard cut-outs to represent the buildings and features of the environment. By simply changing the color of the sheet, a drastic change in the "feel" of the environment can be achieved: tan sheet for the desert, green sheet for Europe, white sheet for Russia, etc. This type of playing surface can also profit from the use of commercially-available modular terrain. Several manufacturers, such as Geo-Hex(R), make hills and other geologic formations in durable pre-painted foam that can be assembled together to create a large variety of battlefields.

The various type of terrain can be represented by cardboard shapes of the appropriate colors, simply placed on the table (though it is often better to tack them down with tape). Buildings can be quickly constructed out of boxes or card; empty tin cans make wonderful factories and storage tanks for industrial areas (such as Stalingrad).

This type of background is well suited for most game scenarios. It takes some time to set up and requires some storage space between game sessions (especially if modular foam terrain pieces are used), but it is visually appealing.

THE FULL-BLOWN BATTLEFIELD

This is the summum bonum: a complete miniature map with scale buildings, ruins, vegetation and so on. Rough areas are represented by sprinkled gravel or sand; vegetation is marked by clumps of lichen or miniature trees. Water can be represented by plastic sheets or bits of mirror or glass. Many manufacturers make buildings customized for historical gaming in several scales.

A convenient way to build detailed miniature scenery is the "tile" method: sections of terrain are built on square tiles made of strong cardboard or wood. These tiles are easy to store and can be assembled to form a variety of different playing surfaces. The only limitation is that roads and rivers must be either straight or curved or they will not line up when the tiles are put together.

This type of background can be created to order for most game scenarios, but will require some efforts to model. It will also take time to set up properly and requires storage space between game sessions. It is, however, the most visually spectacular and rewarding!

STUNNED!

PINNED!

BUTTONED UP

TOP SPEED

SNAP FIRE

SHIKI 41	VALKURIE-B	VALKURIE-A	LOKI-C	LOKI-B	LOKI-A
SHIKI 38	LONGSTREET-A2	LONGSTREET-A1	EARLY-A3	EARLY-A2	EARLY-A1
ROUNDHEAD-C	ROUNDHEAD-B	ROUNDHEAD-A	CAVALIER-C	CAVALIER-B	CAVALIER-A

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Gear Krieg is a tabletop wargame set in an alternate world where the wonders of pulp science-fiction magazines are realities of science. Players take the part of field commanders guiding their mixed forces of tanks, infantry and walker vehicles through various scenarios inspired by the Second World War. This book includes basic rules and walker counters to take control of the armies of any one of five powerful nations to help decide the fate of the Free World.

- Alternate history of Earth for the 1939-1941 period;
- Simple, easy to learn rules that provide realistic results;
- Full rules for fielding armored cars, tanks, infantry and multi-legged walkers;
- Rules that support all the main wargaming miniature scales, from 1/300 to 1/35;
- Advanced rules for Morale, Hull Down Positions and many more;
- Basic tables of organization for the armed forces of Germany, the British Commonwealth, the United States, Soviet Russia and Imperial Japan;
- Game statistics for 53 combat vehicles;
- Color counter sheets for walker vehicles.

A few six-sided dice, pen, paper and miniatures are required to play the game.



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