STORMTROOPERS:

To face the problem with the deadlock on the Western Front, the Germans tried a new approach. Pioneer troops (the only element of the pre-war army experienced with hand grenades and trained for siege warfare) was to form an detachment for testing experimental weapons and the development of appropriate tactics. By adding a machinegun platoon, a trench mortar troop and a flamethrower troop - the concept slowly developed and proved to be very successful. The stormtrooper units differed from regular infantry in the way they were organized, equipped, and the way they fought. Through a dynamic leadership, the assault detachment evolved new tactics to break through enemy trench systems. The soldiers adopted their equipment and uniforms to suit their new methods.

Different versions of metal shields and body armor were tested, but these proved to be to bulky and heavy to be used and were issued to snipers and sentries instead. Some of the soldiers adopted their uniforms by adding leather-patches on their knees and elbows, shielding their most vulnerable joints from wear and tear of crawling. Some soldiers were issued with wire cutters and bridging equipment. Individual stormtroopers soldiers always carried at least one satchel of hand grenades, usually the M1915 "Stielhandgranate" (eng = steelhandgrenade) or the M1916 "Eierhandgranate" (eng = egg handgrenade). The main armament for the stormtrooper soldier was the Mauser Karabiner 98 (M1898AZ), a converted and shorter version of the standard issue rifle Gewehr 98 (M1898). But a new weapon system was developed for the "Sturmtruppen", the worlds first effective submachine gun developed by Hugo Schmiesser. The 9mm parabellum "Bergman MP18", was issued to some of the troops. The NCO:s in charge of mortar or machinegun teams usually carried pistols capable of doubling as a carbine, such as the Luger P08 and the "Broomhandle Mauser" pistols. Both could be fitted with a shoulder stock and a extended magazine.

In addition to the specialized equipment, stormtroopers had a different training and leadership. Emphasis was placed upon individual initiative at all levels, lower ranking officers and NCO:s were given much more responsibility then normal. Discipline and officer vs. man relations were
also much more relaxed and informal then other units of the German Army. The decentralized leadership and training employed troops with looser formations then regular infantry, hereby gaining more flexibility and room for improvisation. The troops were by the standards of that time trained hard and thorough in realistic live ammunition exercises. They were formed to be fit and aggressive, taught the value of constant offensive action and imbued with a sense of eliteness. Only the fittest and the very best of men became a stormtrooper, with further imbued a strong "esprit de corps". The units that was originally called "Stossruppen" (eng = Stormtrooper) got names as "Jagdkommando" (eng = hunting commando), "Patrouillentrupp" (eng = raid troop) or the most famous name "Sturmtruppen" (eng = assault troops).

**MACHINGUNS:**

The "Stosstruppen" had a higher proportion of machineguns per unit compared to regular infantry. This due to their tactics - the trenches were suppressed first by artillery then by machine gun fire as shocktroops armed with grenades assaulted the trench systems. Before the outbreak of WW1 the Germans machineguns were [in short supply], only issued to line infantry regiments, but this soon changed. In the winter of 1915/16 a specialist machinegun units was formed, known as "Maschinengewehr Scharfschützen Trupps" (eng = machinegun marksmen). They trained specifically for the offensive use of machineguns. The standard machinegun was the heavy Maxim 08, which had primarily a defensive role and provided fire support from the trench lines. The German army recognized the need of a lighter machinegun that could be brought with the assaulting troops to act as a mobile fire support. They developed a lighter version of the Maxim 08 and the m08/15 was introduced in 1916. Light machineguns as the British Lewis machinegun and the Danish Madsen used by the Russians, were captured and converted to fit the 7.92mm round used by the Germans. The German army formed special battalions - "Musketen-Battallione" - to use these captured enemy weapons. A four-man squad operated each weapon. Almost all the Madsen guns were lost during the battle of Somme, but instead more Lewis guns were captured. By now all German infantry regiments contained so many light machineguns that there were no purpose in having a handful of battalions armed exclusively with them. However, the "Sturmbatallione" seemed to like this gun so much that they retained them in preference to the later introduced Maxim 08/15. As the number of machineguns increased, the infantry platoons begun to form "gun groups" and "rifle groups", capable of independent fire and movement.

**MORTARS & FLAMETHROWERS:**

Stormtroopers were plentifully equipped with mortars and flamethrowers or purpose-built two man crew "Granatenwerfer" (eng = grenade thrower) that also could fire signal rockets - all useful in close-range trench fighting. Each "Sturmbatallione" usually included a mortar company of their own. Some of the mortars were also held a reserve at the disposal of General Headquarters, that could be sent to support German attacks or to reinforce a hard-pressed sector. The newly developed flamethrowers were operated by an all-volunteer formation of Pioneers and saw extensive use in the trenches.
ARTILLERY & FIRE SUPPORT:

Instead of heavy artillery bombardments that the enemy and his machineguns seemed to survive, why not try the opposite? "Krupp Werken" developed the "Sturmkannone", a light 37mm cannon, that easily could be maneuvered in the frontline. A "Sturmbataillon" was formed to man and test these guns. The Krupp guns proved to be cumbersome and vulnerable, and the unit consisting of two combat engineer companies had a 30% loss in series of minor attacks. The "Sturmkannone" was replaced by the 7.62cm "Infanterie Geschütz" (eng = Infantry support) - cut-down field guns captured from the Russians. The artillery [units] equipped with these cannons developed a new tactic (originating from Colonel Georg Bruchmüller) to fit the "Stosstruppen" need of fire support. Using "Nahkampf-Batterien" (eng = close range batteries), 7.7cm specialized field guns with low-wheeled carriages, providing a small target area. The artillery was to fire upon strong points too difficult to overcome [by] the stormtroopers. The artillery bombardment was formed to help rather then hinder the penetration of enemy lines. The bombardment relied on mathematical range-finding, rather then registering targets with actual shells, so as not to give away the potential axis of the attack. Emphasis lay upon short severe bombards rather then lengthy artillery shoots. The role of the artillery was not so much to physically destroy the enemy’s forces but rather to cause dislocation and confusion, lowering the enemy’s ability to respond effectively to an attack. The artillery fire was first concentrated on enemy gun positions, disrupting their ability to provide counter-fire that could break up the attack. The shelling was precisely timed so that the maximum concentration of fire could be brought down against the "Schwerpunkt" (eng = center of gravity/break in point) on the enemy line. The [barrage] it self could be altered from the stormtroopers by the use of flare signals, thus overcoming the problem of keeping the enemy positions in a suppressive state until the attackers were upon the trench line.

Another new concept was the German aircraft assigned for ground attack, "Schlachtstaffeln" (eng = battle flights), were also used to strafe defenses and rear areas, spreading panic and confusion, making it harder for messengers and enemy soldiers to move around.

STORMTROOPER TACTICS:

The tactics was used again with great success on the assault against the Isonzo front in Italy, the 24:th of October 1917, and during the Cambrai offensive, the 30:th of November the same year. After these battles the Germans refined their tactics during the winter of 1917/18. The attack would now consist of four phases:

1: First a short artillery bombardment would concentrate on neutralizing (not destroying) the enemy front lines.

2: Special units of stormtroopers would then move forward under the cover of a creeping barrage. They would infiltrate the defensive lines, bypassing centers of resistance, then make for the headquarters and artillery positions at the rear.

3: Behind them would follow battle units consisting of infantry armed with a heavy complement of machineguns and mortars. Accompanying them would be combat engineers with flamethrowers and forward artillery observation officers. Their job was to invest the strong points missed by the lead stormtroopers. The observation officers were given authority to change fire plans on their own initiative, thus adding to the flexibility of the attackers.

4: Conventional infantry would follow behind in a forth wave to mop up any remaining pockets of resistance.

The first three waves would advance in bounds, an echelon moving forward when the one to its rear caught up with it. All members of the lead units were imbued with the necessity to keep pushing forward, further into the enemy rear.

The allied soon learnt that the correct response to the infiltration tactics were a flexible defense in depth, a technique that helped to defeat the new "Blitzkrieg" tactics. The numbers of available
stormtroopers had never been quite enough to allow a major offensive to succeed. Germany would soon be defeated and the war would soon be over.

THE FIRST TANKS:

Both the French and the British came up with different concepts to the fully tracked vehicle. By 1916 the British thought that they had succeeded in manufacturing a vehicle that could handle the difficult type of terrain that the muddy fields and barbwire obstacles provided. The 15:th of September 1916, 49 of the new vehicles designated the name "tanks" (for security reasons), saw action for the first time. [Even though] the tanks could not penetrate the German lines, they spread a widespread panic amongst the German infantry. It was clear for those involved in the project that too few tanks had been used. Major J.F.C. Fuller, at this time commander of the fledging Tank Corps, identified the need to concentrate a much larger force of tanks for use against the enemy lines to secure the necessary breakthrough. He initially advocated a series of combined infantry and tank raids of approximately 200 tanks and one or two infantry divisions. These raids would break through the German defense line and cause as much mayhem as possible. Fuller hoped that this type of tactics would lower enemy morale and will to fight long enough for the offensive to succeed. But due to the wrong usage of Fullers ideas the British failed in their intent.

Despite the shock of the new weapon and a limited construction was initiated, the German initially felt that the "Sturmpanzerkampfwagen" (eng="tank") was not a war-winning weapon and decided to concentrated on other ways of approaching to overcoming the trench deadlock. They reasoned that the tanks poor reliability and their lack of range, limited the usage to an infantry support role. The development of new anti tank weapons capable of penetrating the steel plates of early tanks (Anti tank rifle and anti-armor "K" rounds) further undermined the Germans enthusiasm for the vehicle. They seemed to ignore the tank’s potential for mechanized improvement and up-armorung that were bound to come with practical battlefield experience. Instead the Germans concentrated in further development of the "Sturmupper" concept. The Germans envisaged the vehicle being integrated into the stormtroopers units as a form of mobile infantry support gun. There was little or no thought of creating an independent tank corps as the British had done. The tanks became an adjunct to the tactics of the stormtroopers - not a replacement for them - which should later prove to be a sound concept.

PANZER TACTICS & STRATEGYS:

J.F.C. Fuller now Colonel and still Chief of staff at British Tank Corps headquarters, developed a new strategy that became known as "Plan 1919". His new thesis was that the primary objective of an armored attack should be disorganization of enemy troops rather then [their] physical destruction (compare to Bruchmüller’s artillery tactics). Emphasis was particularly laid on the need to attack corps and enemy headquarters, deep behind the enemy lines. This would paralyze the defenders, who would be unable to react to the break-in attack mounted elsewhere along the main enemy defense line. As well as organizational paralysis, this type of attack would also spread panic through the ranks of the enemy, perhaps leading to a precipitate withdrawal. The plan foresaw an attack of three stages:

1: First a force of medium tanks supported by aircraft would break through the enemy line and head for rear area headquarters. They would bypass all centers of resistance, concentrating on passing through the defense line to the enemy rear.

2: This would incapacitate the enemy and reduce his ability to repel the next force to attack the main line of defense, which Fuller called the "Breaking Force". This would consist of heavy tanks, infantry and artillery. Their role would be to open and secure a breach in the enemy defenses.

3: Following them would be the "Pursuit Force" consisting of light tanks, cavalry and motorized infantry. These would pass through the gap into rear areas of the enemy and chase back the now retreating troops for a distance up to 150 miles, which Fuller felt would be enough to secure a strategic victory.
Fuller felt that a force of 5,000 tanks would be needed if any attack would bring total victory to the western front. Although this would be a strain on the economy of the allies, Foch agreed to the plan in principle for the next year should the war drag on. Unfortunately Fuller’s theory never came to use as the war ended, instead this plan would later become central to the German "Blitzkrieg" theory in the interwar years.

By the end of the WW1 all the essential elements of "Blitzkrieg" were tried and tested. Germans perfected the art of infiltration by infantry and shock action through artillery fire. The British had developed the tank and provided a new theory of armored warfare. Both sides had used air support in the ground attack role. Most important, however, both sides had come to realize that victory could only be won not only by the physical destruction of enemy forces but by the dislocation and paralysis of their command structure. The strategy of indirect approach had been proven in combat.

**STORMTROOPERS IN BATTLE:**

In the summer of 1917, the eight Army commanded by General Oscar von Hutier faced the Twelfth Russian Army across the river of Dvina in Latvia. At the mouth of the river stood the port of Riga, the second most important target of the Tsarist empire at this time. The opposite side of the city on the south bank of the river, the Russians had formed a bridgehead from which offensives could be launched against the Germans. The Russian commander, General Klembowsky, placed his best troops in this area, assuming that if the Germans would attack it would be against this dangerous point in the line, especially since the Dvina was a wide river. Troops of lower quality were assigned to guard the riverbank further inland. Von Hutier decided however to use an indirect approach and capture the port by crossing the river to the south-east of the city and sweep around behind it. Von Hutier had realized that by out maneuvering his opponent and making his position untenable, he would cut of the rear of the defending Russians lines of communications, capture the supply centers and the headquarters would be overrun. This would further induce panic amongst the enemy at the frontline and paralysis the hostile troops’ ability to respond effectively. In order to succeed von Hutier had to rely on the surprise, so by the aid of the artillery brought down on the entire length of the line (to hide the "Schwerpunkt") under a five hour period, with mixed in gas shells (containing diethyl sulphide) to further incapacitate and disrupt the Russian defense.

Approximately at the same time as the German tank was introduced, the Germans carried out the first of what in WW2 would be known as "Panzergradier operations". Germans had captured the strategically important Vulkan pass but were unable to press into Romania’s interior due to the heavy resistance of an infantry division at the "Iron gate", a Danube gorge that formed an extensive natural defensive. Through the gorge ran the main north-south railway line, badly needed by the Germans for their supply lines, since the roads in the area could not support the traffic that were to keep an Army in the field. Behind the gorge lay the fortified town of Turnu Severin. It was decided to attempt to capture it by a surprise attack. The forces put together consisted of an infantry battalion, three machinegun platoons, a signals section and a troop of dragoons, a total of some 500 men, of which all but the dragoons were transported by lorries. At dawn on the 20:th of November, Captain Picht (the battle group commander) and his men stormed the town from east, the least expected direction, and held the town for 36 hours against repeated counter attacks from the Romanians. Resistance at the "Iron gate" soon broke down and the German advance into Romania’s interior was able to begin. This operation showed that the benefits of motorization were not lost to the Germans and that the strategy of indirect approach by motorized units came to use at an early stage.