

COMMAND DECISION

* Test of Battle *

Advanced Rules



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Test of Battle

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1 AMMUNITION DEPLETION

All weapons of 20mm or larger in size have a limited supply of ammunition. Smaller weapons, however, do not.

1.1 TRIGGERING AMMO DEPLETION ROLLS

Each time a weapon fires and rolls a 1 on its To-Hit roll, there is a chance its ammo will be depleted. Weapons which fire multiple dice due to a ROF greater than one are subject to ammo depletion for each To-Hit roll which was a 1.

When firing indirect fire, if a single HE Burst (template) round requires more than one To-Hit roll (due to there being multiple targets in the HE template), select one die to represent the chances of ammo depletion. Use a different colored die, and if the roll is 1, check for depletion.

No To-Hit roll is made for H&I fire, and, as a result, there is no chance H&I fire will deplete ammunition.

1.2 AMMO DEPLETION ROLLS

If a "1" is rolled on the To-Hit roll, thus triggering possible ammo depletion; roll a second die, called the ammo depletion die. If several "1"s were rolled for hits by weapons with a higher ROF than one, roll an ammo depletion die for each "1" rolled.

The ammo depletion roll is made at the end of the fire phase; after all other rolls are made.

If the ammo depletion die is equal to or less than caliber of the firing gun (in centimeters, and rounded down to the nearest whole number), the weapon's ammo is depleted.

Example: A 37mm gun rolls a "1" on its To-Hit roll. It rolls again for ammo depletion, and if the second roll is 3 or less its ammo is depleted.

1.2.1 Armored Cars

When making an ammo depletion roll for armored cars, treat the weapon as if it were one centimeter larger, making it easier to deplete ammo.

Example: An armored car with a 2cm gun would deplete its ammo if it rolled a 3 or less-- not a 2 or less.

1.2.2 Tanks

When making an ammo depletion roll for tanks, treat the weapon as if it were one centimeter smaller, making it harder to deplete ammo.

Example: A tank with a 5cm gun would deplete its ammo if it rolled a 4 or less--not a 5 or less.

1.3 LIMITED ISSUE AMMUNITION

All rounds listed on the data chart as limited issue rounds are exhausted after a single fire phase of firing. No ammo depletion roll is ever made for fire by limited ammunition.

In addition, there are several other types of ammunition which do not trigger an ammunition depletion roll, and, instead, have a fixed number of rounds, as discussed below.

1.3.1 Flame Weapons

Personnel-carried flamethrowers may only fire once per game. Vehicle-carried flamethrowers may fire twice per game. Flamethrowers carried by vehicles with fuel trailers may fire three times per game. Flamethrowers may not be refueled or resupplied during the game.

1.3.2 Smoke

Smoke is treated as a limited issue round for all indirect fire stands. They may fire smoke only once--firing smoke does not trigger an ammo depletion roll and resupply does not allow the stand to fire smoke again.

1.3.3 Rocket Launchers

All rockets are listed as limited issue ammunition and so all rocket launchers automatically deplete their ammunition by firing, without need for a depletion die roll. Resupply allows a rocket launcher to fire again. Rocket launchers may only be resupplied once per game, however, and, therefore, each rocket launcher may only fire a maximum of two times per game.

1.4 AMMUNITION DEPLETION EFFECTS

A stand which suffers ammo depletion may not fire until it is resupplied. Vehicles equipped with multiple large caliber weapons (such as the U.S. Grant tank or Soviet T-35) keep separate track of ammunition exhaustion for the two types of guns, and so may be able to fire one gun but not the other.

As noted on the unit organization pages, all regiments and brigades, and some battalions and divisions, have supply vehicles, supply pack animals, or supply porter stands, all of which are collectively called Supply Points. A stand is resupplied with ammunition if it ends a turn within six inches of a supply point of its own battalion, regiment, brigade, or division. A stand may not be resupplied the same turn in which it suffers ammo depletion, even if it is within six inches of a supply point when it does so.

Resupply, however, does not allow a stand to resume firing with limited ammunition. Once a stand has fired a limited ammunition type, it loses the ability to fire that ammunition type again during the game. The single exception to this is rocket launchers.



Design Note:

The supply vehicle or stand for each unit represents the forward distribution point for the unit. This point, in turn, is restocked by higher echelon supply units. Although some companies have their own supply troops, in the game all of these cooperate to support the supply point of the battalion or regiment/brigade to which they are subordinated.

2 ENGINEERS & WATER BARRIERS

2.4.1 Damaging and Destroying Bridges

Only bridges wired for destruction prior to a game may be blown during a game. This will be specified by the scenario.

A bridge wired for destruction prior to the game may be detonated by a friendly stationary unpinned engineer stand within two inches of the bridge (but not on it). The detonation attempt takes place at the end of the movement phase. To detonate the charge, roll a die. If the die roll is higher than the weight class of the bridge, the bridge is damaged. If the die roll is equal to or higher than twice the weight class of the bridge, the bridge is destroyed. A die roll of 10 always destroys the bridge, regardless of its weight class.

If the die roll neither damages nor destroys the bridge, the charges did not go off. The engineer stand may attempt to detonate the charges again on a later turn, but first must end one movement phase on the bridge, unpinned and unsuppressed, rechecking the charges.

Damaged bridges may be repaired during the battle by engineers (see 2.1.2 below). Destroyed bridges may not. A damaged bridge may not be used until it is repaired.

2.4.2 Repairing Bridges

One or more stands of engineers may repair damage to a bridge. Repairs take turns equal to the weight class of the bridge, so an engineer stand could repair a damaged class III bridge in three turns. If two engineer stands are present and working on the damage, reduce the repair time by one turn.

2.4.3 Constructing Portable Bridges

Portable bridges are sets of prefabricated components designed for assembly on-site by engineers. A single set of bridging equipment can be used to assemble one 6-inch bridge of the nominal type, two 6-inch bridges of one grade lower, or one 3-inch bridge of one grade higher.

Example: A set of class IV bridge equipment could be used to assemble two 6-inch class III bridges, one 6-inch class IV bridge, or one 3-inch class V bridge.

Multiple sets of portable bridging equipment may be linked together to build a longer span, but the maximum length of portable bridging is 12 inches.



Design Note:

Longer spans of portable bridging are possible, but take even longer times, sometimes requiring additional work on the banks or to stabilize the middle of the bridge. They should be allowed only at referee discretion, usually as part of a campaign.

Each set of portable bridging requires one engineer stand per weight class to assemble, and takes one game turn per weight class to assemble. The weight class used is the weight class of the bridge set, regardless of the configuration in which it is assembled.

Bridges made from multiple sets of bridging material must be assembled one set at a time, but work may proceed simultaneously from both banks (one set at a time assembled on each bank) if engineers and bridge sets are available to do so.

In addition to the time required to assemble the bridge sets, at least one engineer stand must spend one turn preparing each side of the river bank.

2.4.4 Constructing Permanent Bridges

The number of engineer stands required to build a permanent bridge, and the time, in days (not tactical game turns) required to build it, is the weight class of the bridge.

Example: A class V bridge would require five stands of engineers and take 5 days to build.

2.4.5 Vehicle Launched Bridges (VLB)

A vehicle-launched bridge may be used to cross narrow water barriers, such as canals and streams. They may also be used to cross dry creek beds and ravines (wadis), as well as antitank ditches and road craters. (Rule 4.2)

The data charts list the characteristics of vehicle launched bridges, including their load-carrying class once emplaced. If a bridge launching vehicle spends one complete turn adjacent to the obstacle, the VLB is emplaced. If the bridge launching vehicle spends one complete turn adjacent to its emplaced bridge, it may recover it. Bridge launch vehicles must be given a hasty advance order the turn they launch or recover a VLB, although they do not actually move.

2.1 ASSAULT BOATS

Most engineer units also have access to inflatable or collapsible assault boats as specified in the unit organization charts. An assault boat may carry either one personnel stand (half, standard, or double size) or one class I towed weapon without crew. An assault boat moves 8" per turn. It requires half a turn to load or unload an assault boat.

Assault boats are treated as soft vehicles for combat, but AP rounds have no effect on them. All stands carried by an assault boat when it is eliminated are also eliminated.

3 ENGINEERS & MINEFIELDS

There are two types of minefields: real and dummy. Both types are represented by 1" x 1" templates placed on the table. Real and dummy minefields should be differentiated, but in a manner not obvious to the other player. Either marking the bottom of the template or using a colored piece of paper under the template are acceptable methods.

3.1 PLACING MINEFIELDS

Minefields may be placed on the table before the game starts or emplaced during the battle by engineer stands.

3.1.1 Pregame Placement

The scenario or referee will determine whether, and how many, real and dummy minefields may be placed before the game. Dummy minefields may never be placed on paved roads or streets. Other than this restriction, engineers are generally capable of placing mines in almost any terrain normally encountered. The referee may wish to specifically exclude some terrain, due to difficulty with ground hardness, from mining in a particular scenario.

3.1.2 Laying Minefields During Battles

A player may place a minefield template (either real or dummy) at the end of any movement phase next to each engineer stand which is stationary, unpinned, unsuppressed, and did not fire during the turn. The same restrictions (or lack thereof) with respect to placement of minefields are used for pregame placement.

Each engineer company has sufficient supplies to lay eight real minefields and an unlimited number of dummy minefields during a game. These supplies may be used by any engineer stands in play, not simply the engineers of that company.

The total number of real minefields a player can place during a game, then, is the number of engineer companies in the game times eight.

3.2 MINEFIELD ATTACKS

If any stand, other than a dismounted engineer stand, moves into contact with a minefield template, it may stop at the edge or continue moving. This decision is made again for each minefield template encountered.

After movement is complete, all minefield templates encountered are revealed. Dummy minefields have no effect on troops, and any dummy minefield revealed at the end of movement is removed from the table. Real minefields attack moving troops in the Opportunity fire phase. In addition, troops which moved through a real minefield template stop as soon as they cross it (or are backed up to that point at the end of movement). Stands which stop on the edge of a real minefield template are attacked once. Stands which moved through a real minefield template are attacked twice.

If a dismounted engineer stand moves adjacent to a minefield and stops, the field is revealed normally at the end of movement, but, if it is real, it does not attack the engineer stand. If the engineer stand continues moving through the field, it is attacked like any other stand.

To resolve the minefield attack on a stand, roll one die per attack. Dismounted personnel stands are hit on a die roll of 1 to 3. Dismounted personnel stand manhandling guns, mounted personnel stands (cavalry, motorcycles, bicycles, etc.) and vehicle stands are hit on a die roll of a 1 to 5.

If a stand is hit use the hit results table to determine the effect. Stands which suffer a force back result and are forced to move back through the minefield do not suffer any additional attacks while moving back.

Attacks on stands count as fire for morale purposes, even if the attacks had no effect.

3.3 CLEARING MINEFIELDS

Once a real minefield is detected, it may be cleared by engineer stands or engineering vehicles.

3.3.1 Hand Lifting

An engineer stand may clear a path through a real minefield, called hand lifting, because the engineers detect, uncover, and “lift” the mines by hand. The engineer stand must spend one turn adjacent to the minefield with a cautious advance order and may not fire. If, at the end of the turn, the engineer stand is unpinned and unsuppressed, the minefield template is removed from play.

3.3.2 Mine Clearing Tanks

Mine clearing tanks are equipped with mine rollers, mine plows, or mine flails. A mine clearing tank which starts adjacent to a mine template and receives a cautious advance order may move forward two inches, clearing any mine templates it moves across. Flail-equipped tanks may not fire while clearing a minefield.

3.3.3 Line Charges

If an unpinned and unsuppressed engineering line charge vehicle with a cautious advance order begins the movement phase adjacent to a minefield, the player may remove the minefield and then move the engineering vehicle during the movement phase. If the engineering vehicle ends the opportunity fire phase adjacent to another minefield and is still unsuppressed, the player may remove that minefield as well.



Historical Note:

Line charges are pipes, tubes, or hoses filled with explosives and pushed or fired over a minefield. When detonated, the shock explodes any mines under or near the line charge. They were just coming into use in World War II and were known as “Bangalore Torpedoes” to Americans.

4 ENGINEERS & OBSTACLES

Obstacles are never constructed during a game. They are always present on the battlefield at the start of a game. Obstacles include barbed wire, antitank ditches, road craters, abatis, and antivehicular obstacles. Engineer stands may clear obstacles to assist movement.

An engineer clears a point obstacle, such as a road crater, or clears a one inch wide path through a linear obstacle, such as an antitank ditch, barbed wire, line of antivehicular obstacles, or abatis, by spending one or more turns adjacent to it, as noted below.

In all cases, the engineer must begin the movement phase of the first turn of work adjacent to the obstacle; must be unpinned and unsuppressed throughout the time spent working; and may not fire while working. The normal time listed below to clear the obstacle is used if the stand has a Hasty Advance order, and, therefore, receives no benefit of cover while working. If the stand has a hold order, and, therefore, receives the benefit of light cover, if in the open, or whatever other terrain cover is available at the work site, twice as long is required to complete the work.

In all cases, an engineering earthmover can do the same task in only a single turn. Engineer earthmovers include bulldozers, tank dozers, angle dozers, graders, and draglines. The engineer earthmover always works under a Hasty Advance order.

4.1 BARBED WIRE

Barbed wire slows movement of personnel and some vehicles. It takes one turn for engineers to clear a gap through barbed wire. Engineer earthmovers may do this job instead. An engineer earthmover still takes one turn, but can clear four inches of barbed wire a turn.

4.2 ANTITANK DITCHES & ROAD CRATERS

Antitank ditches and road craters slow movement of personnel and prevent the movement of vehicles. It takes two turns for engineers to fill in a road crater or make a one inch wide crossing point in an anti-tank ditch.

Antitank ditches and road craters may also be bridged by Vehicle Launched Bridges. (Rule 2.1.5) In addition, vehicles equipped with fascines (large bundles of branches) may fill in road craters and antitank ditches, using the same procedure as Vehicle Launched Bridges.

4.3 ANTIVEHICULAR OBSTACLES

Antivehicle obstacles have no effect on personnel movement, but prohibit the movement of vehicles. It takes four turns for engineers to clear a one-inch wide path through antivehicle obstacles.

4.4 ABATIS

Abatis is impassable to all stands. It takes four turns for engineers to clear a one-inch wide path through abatis.

5 PREGAME ENGINEERING

This rule covers tasks by engineers which take place primarily before a game begins or which are important in campaigns.

The referee may allow one side or the other or both a set number of hours before the game starts to engage in engineering tasks. The times given below for various engineering tasks, however, represent the ideal. They may be modified by terrain, weather, and other consideration imposed by the referee.

Most engineering tasks are described in terms of how much work can be done by a single stand in a single work day. The exception to this is the rule on foxholes and entrenchments, which are dug by units themselves, not usually engineers. In all cases, if engineering earthmovers can be used, the effectiveness of the work (whether measured in number of installations or linear inches of obstacles completed) is multiplied by four.

5.1 DEFENSIVE WORKS

Defensive works include foxholes, entrenchments, and fortifications (bunkers and pillboxes). Defensive works may not be constructed in flooded areas, heavy mud, or any type of permanent mud. Defensive works may be built in ground which may later turn to mud, and such a change has no effect upon them.

5.1.1 Foxholes and Entrenchments

Any dismounted personnel stand(s) which has been present in place for three or more hours before the battle may be in foxholes (medium cover).

Any dismounted personnel stand(s) which has been present in place for six or more hours before the battle may be in entrenchments (hard cover).

5.1.2 Fortifications

They used bulldozers to dig large, inverted, tapered wedges, with the dirt pushed into the end facing the enemy. A tank could then enter the pit with its gun barrel barely above ground level. This offered protection for the tank hull and exposed only the gun, the gun mantlet, and the forward part of the turret...

--Lt. Belton Cooper
U.S. 3rd Armored Division

If a unit has been in position for a day or longer, each engineer stand may build a single fortification or it may upgrade two entrenchments to fortifications. Each fortification may hold a single dismounted personnel stand (including a gun crew and its towed gun). Engineering earthmovers do not assist in constructing fortifications.

Instead of a fortification, an engineer stand may construct one tank ramp in a day. An engineering earthmover may construct four tank ramps.

5.2 OBSTACLES

Engineers are particularly effective at constructing anti-mobility obstacles.

5.2.1 Antitank Ditches

One stand of engineers may dig one inch of antitank ditch in a day. Earthmovers dig twelve times this amount in a day. Antitank ditches may not be dug in woods, forest, or swamp.

5.2.2 Barbed Wire

An engineer stand can emplace an almost unlimited amount of barbed wire in a day. The actual limitation on barbed wire is weight and availability. A typical engineer company will carry enough wire to cover a 12 inch frontage. Additional wire will be available at the referee's discretion. Engineering earthmovers may not lay wire.

5.2.3 Road Craters

An engineer stand may create two road craters in a day. Engineering earthmovers create eight road craters in a day.

5.2.4 Abatis

An engineer stand may construct up to four inches of abatis a day in woods or forest. An engineering earthmover may construct four times as much.

5.2.5 Antivehicular Obstacles

An engineer stand can construct up to two inches of antivehicle obstacles a day. Engineering earthmovers do not assist in the constructing antivehicle obstacles.

5.3 ENGINEER SMOKE GENERATORS

Engineer smoke generators may be present as part of a battle, at the referees discretion. They may not move once in position. They may begin generating a smoke screen on any turn, or the referee may declare the smoke screen already in place at the start of the game.

A smoke generator creates a smoke template 2" wide and 6" in length each turn. Smoke templates are always placed so the length runs in a downwind direction from the generating point. The smoke generator itself is always covered by its own smoke screen.

Each turn smoke is generated, an additional 6-inch template is be added to the length of the smoke screen, up to a maximum length of 36 inches.

The screen ends when the generating stand voluntarily ceases to produce it; is pinned; or moves from the generating point for any reason (forced back, etc.). From the time the smoke screen is no longer being generated, remove two smoke templates per turn from the upwind end of the smoke screen.

Engineer-generated smoke has the same effect as other smoke screens.



Historical Note:

One of the many functions of engineers was to create smoke by means of smoke generators or smoke pots. These were bulky, and used considerable amounts of fuel, so engineer-created smoke screens had to be carefully planned in advance and the material needed for them had to be prepositioned. They had, however, the advantage of much greater duration than artillery-delivered smoke.

6 STRUCTURE DAMAGE & DESTRUCTION

The bombs from the leading wave of aircraft erupted across the town in long sticks. Huge spouts of reddish smoke shot upward. I wondered why the smoke was red... Then the reason for the red smoke struck me – it was brick dust. Villers Bocage was being pulverised.

--F.R. Leatherdale (R.A.F. 115 Squadron)

Buildings and other structures on the playing surface may be damaged or destroyed by demolitions, close or medium range large caliber direct fire, and large aerial bombs.

6.1 DAMAGING STRUCTURES

Any bridge, fortification, and BUA sector is vulnerable to damage.

Vulnerable targets may be damaged by aerial bombs delivered by dive, medium, or heavy bombers; by direct (close or medium range) HE fire by guns of 150 mm or larger; and by engineer demolitions. In addition, flame weapons start fires in flimsy BUA.

6.1.1 Large Aerial Bombs

If a vulnerable structure is in the burst area of a large aerial bomb, roll a die (in addition to any rolled to hit stands in the target area). If a “1” is rolled, any vulnerable structure in the burst template is damaged. If a “1” or “2” is rolled, any flimsy BUA in the burst template is damaged.



Design Note:

Fighters and attack aircraft tend to carry smaller bombs, and, while they may carry enough of them to have the same effect on troops, they are not as likely to bring down structures as larger aerial bombs.

6.1.2 Close Range Large Caliber Direct Fire

If a large caliber gun fires close range direct fire at a vulnerable structure, either at the empty structure itself or at a stand in or on the structure, roll a die (in addition to any rolled to hit the stand in or on the target structure). If a “1” is rolled, the structure is damaged. If a “1” or “2” is rolled and the target is a

flimsy BUA, it is damaged. Note: these are the same rolls as for a large aerial bomb.



Historical Note:

Towed and self-propelled large caliber guns became a regular feature of fighting in German cities toward the end of the war. The Red Army always tried to attach a battery of ISU-152 to its leading assault regiments, or even a battery of towed 203mm howitzers, for direct fire on large buildings. There is a fair amount of documentary film footage of 203mm howitzers firing in the streets of Berlin, with predictably impressive results. When the U.S. Army was confronted with a similar tactical situation in the assault on Aachen in late 1944, it brought forward self-propelled 155mm guns – usually reserved for long range bombardment and counterbattery fire – to batter down blocks of stone and concrete buildings.

6.1.3 Engineer Demolitions

A vulnerable structure wired for destruction prior to the game may be detonated by a friendly, stationary, unpinned engineer stand within two inches of the structure (but not on or in it). The detonation takes place at the end of the movement phase. For demolitions of bridges, see Rule 2.1.1. All other vulnerable structures are automatically destroyed.

6.1.4 Flame Weapons

Flame weapons include flamethrowers and napalm dropped from aircraft. (Rule Error! Reference source not found.)

6.2 EFFECTS OF DAMAGE

Damage has different effects on fortifications and Built-Up-Areas (BUA).

6.2.1 Fortifications

Damaged fortifications are treated as entrenchments (hard cover). A fortification damaged twice is destroyed and removed from play. Any stand in a fortification when it is damaged or destroyed takes one automatic hit (in addition to any it may have taken from fire).

6.2.2 Damaged Built-Up-Areas (BUA)

Any damage on a BUA converts it to rubble. Flimsy structures are set on fire. Strong BUA are reduced to medium cover and flimsy BUA are reduced to light cover. Any stand in a BUA sector when it is reduced to rubble takes one automatic hit, in addition to any it may have taken from fire.

In addition, flimsy BUA reduced to rubble catch fire. All stands in a BUA on fire suffer a force back result; no stand may enter a BUA on fire; and a 6-inch by 1-inch smoke template is placed on the table starting in the BUA and stretching down wind.

Any flame attack on a flimsy BUA reduces it to rubble and sets it on fire.

Roll at the start of each following turn for each burning BUA, and on a roll of “1”, “2”, or “3” the fire goes out and the smoke template is removed.

6.2.3 Bridges

The effect of damage to bridges is covered in Rule 2.1.1.

7 AIRBORNE OPERATIONS

Airborne operations involve the delivery of troops to the battlefield by parachute or glider. Command Decision: Test of Battle™ is a ground game; therefore virtually all of the “airborne” part of the operation is ignored or heavily abstracted. The following rules are concerned only with the troops once they are on or over the battlefield.



Design Note:

Airborne operations are enormously complex and require extensive planning and preparation before they can be launched. Almost all of this is beyond the domain of the ground commander, however, and, therefore, the game simply assumes it has been taken care of by a competent staff somewhere.

7.1 HITTING THE DROP ZONE

The drop zone is the location on the battlefield where airborne troops touch ground. Troops are brought to the drop zone by aircraft, such as transports and gliders. Transports and gliders have no function in the game except to land troops.

When airborne troops enter play (usually on the first turn of the game) their aircraft are placed above their intended drop zones. Aircraft are then fired at by AA fire, and those which do not abort land their troops and/or towed weapons.

Unlike most other parts of the game, towed weapon models are treated as completely separate objects from their gun crews and transports when landing by air. It is possible for the gun crew to be eliminated or aborted while the towed gun itself survives, and vice versa.



Design Note:

Transport aircraft and gliders are not described in detail as to performance and capacity, and aircraft models do not represent any fixed number of craft. Instead, each transport or glider represents enough aircraft to carry one stick of paratroopers, or one stand of glider-borne troops, one vehicle stand, or one towed gun model, to the battlefield. Usually this means they represent about four transports or gliders, but may represent fewer or more as required.

7.2 PARACHUTE LANDINGS

Only personnel stands and towed weapon models designated as “parachute” in the national organization charts may be landed by parachute. Troops and gun models landed by parachute are landed in “sticks,” each game stick consisting of all the troops and towed weapons of a single company.

Parachute landings require each stand and model gun dropped have a 2”x2” square of paper prepared and marked as to which stand or gun model it represents. Gun crews and towed weapons, which are dropped by parachute, should have a separate square for the crew, the ammunition, and the weapon.

All of the squares of a single stick are placed on a ruler or yardstick, with the written stand designations up or down, as the player wishes, in whatever order is desired, with the edges of the paper touching but not overlapping. The ruler is placed centered over the drop zone, parallel with the aircraft’s flight path. Any flight path may be chosen by the player, but all parachute transports which drop troops must have the same flight path.

Once the ruler is in position, it is turned upside down to spill the squares, which should be allowed to flutter to the playing surface unhindered.

7.2.1 Drop Altitude

The heights for each air crew when dropping during daylight are as follows:

Elite	6”
Veteran	12”
Experienced	18”
Regular	24”
Trained	30”
Green	36”

This is increased by 6” for each -1 to the “hit number” caused by AA fire. It is increased by 6” during a clear moonlit night and by 12” during a moonless or overcast night and in bad flying weather.

Example: A veteran aircraft normally drops at 12” during daylight. If it suffered one hit, it would drop from 18” instead. If it suffered 2 hits it would drop from 24” instead. If it suffered 3 hits it would not drop at all as the mission would be aborted.

When dropping on an overcast night, the normal drop height would be 24”, increased to 30” by one hit and to 36” by 2 hits.

7.2.2 Drop Results

Squares which fall with the marked side up are replaced by their actual stands.

Squares which fall with their marked side down are replaced by their actual stands and are given a suppressed marker.

Squares which fall with their marked side down in woods/forest, buildings or swamps are replaced by their actual stands, given a suppressed marker and takes a hit and must roll on the hits results table.

If a square falls in a deep body of water (river, lake, or pond) or fails to land on the playing surface, it is considered to be lost en route and is removed from play. If playing with the regroup rule, these lost stands are available to be regrouped.

Paratroopers may not move the turn they land. They are considered to have been given a Hasty Advance order, but have spent their movement descending and getting free of their parachute harness, and are, therefore, -2 firing at enemy targets.

When conducting AA fire against transport aircraft, stationary AA guns within 24 inches of the drop zone may fire. Each AA gun rolls dice equal to its printed ROF divided by 2, rounding fractions up. The die roll needed to hit is a 3 or less. Veteran and Elite AA units receive a +1 to hit. Green and Trained AA units receive a -1 to hit. When a transport aircraft takes a hit from ground fire, it rolls on the Hit Effects Chart. An eliminated result means the aircraft is aborted and returns to base without conducting its mission. A Forced Back result increases the drop altitude by 6” per Forced Back Result. Three force back results on the same transport aircraft cause it to abort.

After any surviving transport aircraft release their passengers, any stationary stands within 24 inches of the drop zone may conduct Opportunity fire at the paratroopers as they descend. Measure the range from the spot that the paratroopers land to the firing stand. The paratroopers do not receive the benefits of cover, but all fire directed at them is at a -2 to hit due to the difficulty of firing at the targets in mid air. If the stands wait until the paratroopers land, they do not receive the -2 to hit, and normal line of sight restrictions to fire apply.

Example: A company of German paratroopers are arriving over the drop zone in aircraft piloted by Veteran pilots. There is a Bofors 40mm AA gun within 24 inches of the drop zone, which chooses to fire at the aircraft, and rolls 1 die for a to hit of a 3. It gets a hit, and then rolls a “6” – a force back result. The German player randomly determines which stand is hit, and drops that stand from a distance of 18”. He then drops the remainder of the company from the normal height of 12”. There are four other British infantry stands within 24” of the drop zone that have also declared to fire at the paratroopers as they come down. Three of the markers land in the open within 6 inches of the British infantry, and the remaining one lands in a wood within 6 inches. The British may fire at all of the German paratroopers as they descend, hitting on a 3 (normally a 5 at medium range, -2 for shooting at descending paratroopers), or they may

7.3 GLIDER LANDINGS

Only personnel stands, vehicles, and towed weapon models designated as “glider” in the national organization charts may be landed by glider. Troops, vehicles, and gun models landed by glider are landed in “sticks,” each game stick consisting of all the stands and towed weapons of a single company, and each stick is targeted at a single drop zone.

Each glider (carrying a single stand or towed weapon) is landed within two inches of the drop zone target or within 2 inches of another glider of the stick which is itself within 2 inches of the drop zone target.

7.3.1 Landing Success or Failure

To land successfully, the glider crew must roll its Landing Number or less on the die. The landing number is:

Daylight	8
Clear Night	6
Overcast or Moonless Night	4

Each hit taken by AA fire, reduces the Landing number by one, and three hits abort the glider. In addition, veterans and elites add 1 to their landing number while green and trained units subtract 1.

7.3.2 Successful Landings

If the glider rolls its modifier success number or less, the glider lands where it was targeted. The transported stand may not move that turn and is considered to have received a Hasty Advance order. If it does fire, it does so with a -2 modifier to its hit number.

7.3.3 Unsuccessful Landings

Gliders rolling exactly a “10” are considered destroyed or lost en route, and their stands are removed from play.

Gliders otherwise failing the landing success roll check for deviation, rolling direction first (Rule 10.1.1) and then one die for distance in inches. Gliders piloted by Veteran or Elite crews halve the distance of their deviation die roll, gliders which are piloted by Green or Trained crews double it.

Gliders which deviate, but still land in open terrain, unload their passengers normally.

Gliders which deviate onto orchards, woods, forest, linear obstacles, structures, vehicles, or other gliders crash.

7.3.4 Crashes

Crashed gliders take one hit on the stand carried by the glider. In addition, the glider crew rolls once again for its landing number. If it makes the second check, no further damage is done. If it fails, the stand carried takes one additional hit. In both cases, roll the result of the hit on the hit result chart, the same as if it had been inflicted by fire. If the hit result is Forced Back, there will be no effect other than any resulting morale effect as a receiving the Forced Back result.

Gliders deviating into a lake or deep body of water, into prohibited terrain (such as a cliff or burning BUA) or off the table edge, are considered to be destroyed or lost en route, and their stands are removed from play. They are available to be regrouped.

8 AMPHIBIOUS OPERATIONS

Command Decision: Test of Battle™ is a land combat game and, therefore, ignores most of the purely naval aspects of amphibious operations. Instead, it concentrates on the area from the surf- or beach edge- inland. By the same token, it deals only with the opposed assault waves not the routine and unopposed buildup which follows.

8.1 HITTING THE BEACH

Troops are brought to the shore by amphibious vehicles, such as Amtracks, or by landing craft. Landing craft have no function in the game except to bring troops ashore.

When the assault wave enters play, usually on the first turn of the game, its landing craft and/or amphibious vehicles are placed on the table six inches off the beach. This is where movement is finished for the turn. If fired on, they are fired on in that position. Vessels and vehicles in this location are said to be “making their approach.”

The next turn the landing craft and/or amphibious vehicles move to shore. Upon reaching shore, they are said to have “landed.”



Design Note:

Landing craft are represented at no fixed ratio- each model represents enough craft to bring ashore one stand of troops or vehicles. Usually this means a model landing craft represents one actual LCVP or similar-sized craft, but it may represent 2 small lighters or whaleboats, or a larger number of inflatable rafts. By the same token, it may represent four or five LCM-sized landing craft bringing ashore a platoon of tanks or other vehicles.

8.1.1 Landing Craft

The landing craft “beach” and the stand carried in the craft may disembark the same as if dismounting from a vehicle. All troops of an assault wave are assumed to have a Hasty Advance order when they hit the beach. Since the vehicle (landing craft) has already made part of its move, the disembarking stand may only move onto the beach adjacent to the landing craft. The disembarking stand ends its move in that position.

Provided it has the necessary order, it may move away from the beach in subsequent turns.

8.1.2 Amphibious Vehicles

Amphibious vehicles actually move to the beach, and then may move across the beach under their own power. Passengers are unloaded using the normal rules for mounting and dismounting from vehicles. Most amphibious vehicles move at 1/2 their base movement allowance while moving in the open water and the base movement allowance while moving in rivers and lakes. LVT, however, always move at the base movement allowance when moving in water.

8.1.3 Scatter

Depending on the scenario being played, there exists a substantial chance the landing force will arrive at the wrong beach. If the referee determines it is possible for the landing force to scatter, he rolls one die for each company in the assault wave. On a roll of 5 or less, it scatters; while on a roll of 6 or more it lands where intended. If it scatters, roll again for direction (even left, odd right) and distance. Multiply the distance die roll by 2, and the company lands that many inches to the right or left.

8.1.4 Wading Ashore

In some scenarios, troops will have to wade ashore. Troops wading ashore are placed in the “approach” position six inches off the beach on their turn of entry. Wading troops pay two for one when wading ashore, and all wading troops are assumed to have a cautious advance order. As a result, they move three inches toward the beach each turn of movement.

If a commander ashore is in a position to give them a Hasty Advance order, they may follow that order instead. They may only obey orders issued by command stands--not staff orders.

8.1.5 Mines

Mine fields may be laid on or adjacent to beaches, above or under water. They function as normal minefields with regard to vehicles and personnel. Landing craft which encounter a submerged minefield suffer a

hit. See “Attacking the Landing Wave” below for the effects of a hit.

8.1.6 Obstacles

These include dragon’s teeth, abatis, pylons, Belgian Gates, etc. which can be both above and below the surface of the water. They are treated the same way as their land counterparts, with the exception being a landing craft encountering a submerged obstacle suffers a hit. See “Attacking the Landing Wave” below for the effects of a hit.

8.2 ATTACKING THE LANDING WAVE

Landing craft and amphibious vehicles may be attacked by units on shore and by aircraft.

8.2.1 Target Type

All amphibious vehicles (including armored amphibious vehicles) and most landing craft are treated as Weak AFV, with an armor value of “0”, when fired on. Rubber rafts are treated as soft vehicles for combat, but AP rounds have no effect on them.

8.2.2 Weight Class

For purposes of high explosive fire, most landing craft have an assumed weight class of V. Smaller improvised wooden landing vessels, such as whaleboats, have an assumed weight class of III. Rubber rafts have an assumed weight class of I.

8.2.3 Troop Quality

The referee must determine the troop quality of the landing craft crew for the scenario.



Historical Note:

Most landing craft crews would be Trained or Regular early in the war, (such as through 1942). Those nations which did not make a major investment in amphibious operations would stay that way. For the British, Americans, and Japanese, however, landing craft crews would usually be Experienced in 1943 and Veteran from 1944 on.

8.2.4 Forced Back Results

An amphibious vehicle or landing craft which is forced back while making its approach is moved off the table. It may reenter the table the next turn, at which time it is again placed at the 6-inch “approach” position.

An amphibious vehicle or landing craft which is forced back while moving from the “approach” position to the beach is placed back in the “approach” position.

A landing craft which is forced back after it has disembarked its troops is removed from play.

An amphibious vehicle on land which is forced back follows the normal game rules for a forced back stand.

Any nonamphibious vehicle forced back into the water is eliminated.

Any personnel stand forced back into the water is placed in the water and must then wade ashore again. See “Wading Ashore” above. (Rule 8.1.4)

8.2.5 Eliminated Results

Any landing craft or amphibious vehicle which suffers an eliminated result is removed from play. Any vehicle or towed weapon carried is eliminated as well. Any personnel stand carried suffers a hit which may eliminate it, force it back, or have no further effect on it. If it is forced back, it is placed six inches off the beach, in the “approach” position, and must wade ashore. If it suffers no additional affect from the hit, it is placed in the water where the vehicle or landing craft was sunk and must wade ashore from there.

8.3 AMPHIBIOUS LIFT

In some amphibious assault battles, troops may arrive in multiple waves. If so, losses of landing craft in one wave will affect the ability to bring more troops in later. In addition, in campaigns, the total lift available to both sides will be important. In both cases, lift is measured in Amphibious Lift Points.



Design Note:

A good rule of thumb for allied amphibious landings would be one die in 1943, two in 1944, and three in 1945.

8.3.1 Amphibious Lift Points

Each lift point is sufficient to bring one stand of personnel ashore. Vehicles and towed guns require lift points equal to their weight rating. For example, a class V tank requires 5 lift points to bring it ashore.



Design Note:

Lift points represent variable numbers of landing craft of different sizes, and are assumed to be used in the most efficient manner possible. The player is not responsible for keeping track of different types of craft, or deciding how best to utilize them; that's the Navy's job.

8.3.2 Lift Point Losses

Whenever a stand is sunk approaching the beach, the lift points used to carry it are lost as well. In a campaign game, this reduces the total lift points available to a player. In a battle scenario, it reduces the lift point available in that wave.

In most cases, landing craft will be sufficient to transport two waves of troops ashore. While the second wave is being landed, the first wave's landing craft are returning to the off-shore transports to load additional troops.

As a result, in a battle scenario, a player keeps track of two different totals of Lift Points: one for the even numbered waves, and one for the odd numbered waves. Lift points lost in the first wave, for example, do not reduce the number of troops carried in the second wave (those arriving on the second game turn), but would reduce the number of troops carried in the third (and fifth, etc.) waves.

8.4 NAVAL GUNFIRE

Naval Gunfire is divided into two types: the preliminary bombardment and naval fire support during a battle.

8.4.1 Preliminary Bombardment

Depending upon the duration and intensity of the preliminary bombardment, the referee rolls from one to three ten-sided dice per enemy stand in the target area.

Resolve this as a standard HE indirect fire attack with an assumed HE value of 10.

8.4.2 Naval Fire Support

The number and type of naval fire support ships available to the attacker is determined by the referee as part of the scenario forces. All fire support by naval vessels is resolved as indirect fire HE. All naval vessels have sufficient range to hit any target on the battlefield, and, therefore, no range is listed. Instead, the following table lists the ROF and firing values for typical naval fire support ships.

Warship ratings

<i>Ship Type</i>	<i>ROF</i>	<i>HE Effect</i>
Battleship	3	2”(9)H
Heavy Cruiser	3	2”(8)H
Light Cruiser	3	2”(7)H
Destroyer	2	2”(7)H
DE's etc	1	2”(7)H
APD	1	1”(4)H

8.4.3 Observing and Requesting Naval Fire Support

Any stand which can normally request artillery fire may request naval fire support; however, all stands except for dedicated naval FO and USMC Joint Assault Signal Company (JASCO) stands, roll on the artillery response table as nonartillery command stands when requesting naval fire support.

Each ship usually has a dedicated naval Forward Observer (FO) stand. Dedicated naval FO treat their ship as a dedicated battery but only request fire from their ship.

USMC JASCO stands call fire from Marine artillery and from all naval fire support ships as if an artillery command stand

Destroyers and smaller ships often come in fairly close to the beachhead to give direct support, and, therefore, Destroyers and smaller vessels may self-observe their fire if it is against any target which is visible from any point along the beach.

9 NIGHT

The following rules address the effects of twilight and night. These rules add considerable complication to the game, primarily to the referee's duties. Night actions should be rare, but they do take place from time to time. Night has the following effects on the game:

9.1 GENERAL EFFECTS

During night turns, the following limitations are imposed:

9.1.1 Time Scale

Each night turn represents two full hours of time instead of thirty minutes. All rates of fire, ranges and movement distances remain the same.

9.1.2 Visibility and Spotting at Night

Visibility is limited to 4" under normal conditions and 2" on overcast nights or nights without significant moonlight. This is also the spotting distance for all target types, except stands with a daylight spotting distance of 6 inches or less must be contacted to be spotted.

Firing stands are automatically spotted at night by all stands with an unobstructed line-of-sight (LOS) to them. Stands which are spotted and are beyond the normal night visibility range, however, are fired at with a modifier of -2, as the firing stands are firing only at muzzle flashes. Stands spotted due to firing in one turn may be fired on in the following opportunity fire phase, but only at the point from which they fired the previous turn. If they do not fire again in the following turn then they are no longer spotted.

9.1.3 Troop Quality and Morale

During night turns, all units have their troop quality reduced by one level (Veterans function as Experienced. Experienced function as Regular, Regular function as Trained, etc. Green units remain Green). In addition, all morale levels are reduced by two during night hours.

9.1.4 Pin Results

Units never automatically recover from pin results at night. Instead, each pinned unit must test morale each morale phase.

9.1.5 Command and Orders

During night turns, the radius of effect for an order is reduced from six inches to three inches. In addition, units may not be given rally orders during night turns.

9.1.6 Aircraft

Aircraft may not fly at night, except for airborne missions. Only anti-aircraft batteries equipped with sound detection, searchlights, or radar apparatus may fire at aircraft with their full rate of fire. All other AA batteries fire with one less die than normal. If this would reduce them to zero dice they may not fire.

9.1.7 Engineering

Engineering tasks take longer at night. Each task which normally takes one hour or less takes one complete night turn. Tasks which take longer than an hour take as many night turns to accomplish as the number of hours it would normally take.

9.2 ILLUMINATION

Illumination negates the limitations of night spotting. An illuminated stand may be spotted at the maximum daylight visibility distances and using the daylight visibility range bands. A stand is illuminated if it is within 1" of a fire, such as campfire or burning vehicle, or 3" of a large fire, such as a burning building, or within the area illuminated by an illumination round or searchlight.

9.2.1 Illuminating Rounds

All indirect fire weapons have illuminating rounds available. Illuminating rounds are treated as Limited Issue ammunition. Indirect fire units fire illumination rounds use the same procedure as other indirect fire

missions with the exception the illumination round takes effect at the same time, and for the same duration, as a smoke mission.

The area illuminated by an indirect fire illumination round is equal to four times the burst area of the weapon's HE round.

9.2.2 Searchlights

Players may also use searchlights to illuminate an area. A searchlight illuminates an area 2" wide out to 40" in a straight line. The searchlight beam follows LOS rules and so can be blocked by woods, buildings, etc. Searchlights are automatically spotted by any enemy unit having a direct LOS to the unit.



Historical Note:

The British and Americans sometimes used searchlights to bounce light off of low clouds and create a soft illumination across the entire battlefield, like bright moonlight. If the referee allows the use of artificial moonlight in a scenario, treat night as if it were twilight.

9.3 SOUND

Detecting movement by sound becomes possible during night turns. A stationary stand which does not fire may detect moving enemy stands by sound. Moving personnel are detected within 6 inches, and moving vehicles are detected within 24 inches.

A stand may not detect sound in noisy or sound-deadening conditions. A noisy condition would occur if a stand is firing, or being fired on, within 12" of the stand attempting to detect or if an enemy stand is firing or being fired on within 12 inches of where the detection attempt is being made.

Sound deadening conditions occur during a rain or snow storm or a moderate or high wind condition, depending on the intensity of the weather and the referee's discretion.

Stands detected by sound are not automatically spotted, but, rather, are treated for spotting as if half as far away as they actually are. Stands detected by sound may also be illuminated by searchlights or illumination rounds and so spotted.

Example: A moving infantry stand is detected by sound by a stationary enemy stand when it moves within 6 inches of it. Because the moving stand is detected by sound, it is treated as being only 3 inches (instead of 6) away from the stationary stand. On a normal night, visibility is 4 inches, and so the moving stand would be spotted, but on an overcast night (visibility 2 inches) it would not be.

9.4 TWILIGHT

Twilight turns represent one hour of time instead of the normal 30 minutes of time. There is one turn of twilight immediately following sunset and immediately before sunrise. Twilight reduces maximum visibility distance to 30 inches, and all spotting distances are cut in half, rounding fractions down. Fractional results rounded down to zero mean a stand must be contacted to be spotted. No other night restrictions are in effect.

10 WEATHER

Weather affects both movement and visibility, and, in some cases, indirect fire as well.

10.1 WIND

Wind primarily affects the direction of smoke drift, but higher winds can produce additional effects.

10.1.1 Wind Direction

This may be accomplished by referee fiat, or randomly by consulting the Wind Direction Chart (see below). To use the chart, pick “North” on the game table, and orient chart so the “1” arrow on the chart points that way. Roll a D10, and consult the chart, rerolling on a result of 9 or 10. The number corresponding to the number rolled is the direction from which the wind is blowing.

			N		
			1		
		8		2	
W	7				3 E
		6		4	
			5		
			S		
Reroll on a 9 or 10					

10.1.2 Wind Force

There are three classes of wind: light, moderate and high. It is quite rare for no wind at all to be blowing, and, therefore, the normal wind condition is light.

Light wind has no effects other than to move smoke in a given direction.

Moderate winds limit the maximum length of a smoke template to four inches. Moderate wind in dry, dusty conditions counts as Twilight/Mist for visibility and spotting. Moderate wind during precipitation increases the effective level of the storm by one for purposes of visibility and movement.

High winds limit the maximum length of a smoke template to one inch. High wind in dry, dusty conditions counts as fog for visibility and spotting. High wind during precipitation increases the effective level of the storm to heavy precipitation, if it is not already at that level, for purposes of visibility and movement. High wind makes sound detection at night impossible.



Design Note:

Because of the effects of high winds on the game, referees are advised to limit high wind conditions to one or two turns and then reduce them to moderate.

10.1.3 Variable Wind

For simplicity, the referee should usually decide on a wind direction and intensity at the start of the game and keep that constant. If variation in wind direction and intensity is desired, however, either roll once per turn on the following chart, or construct a similar chart with the desired chance of different results on it.

Wind Variation (roll once per turn)		
Roll	Direction	Intensity
1-8	No change	No change
9	Shift 1 clockwise	Decrease by 1 level (light unchanged)
10	Shift 1 counterclockwise	Increase by 1 (high unchanged)

10.2 MIST AND FOG

Mist and fog affect visibility and movement.

10.2.1 Visibility and Spotting

Mist reduces maximum visibility distance to 30 inches, and all spotting distances are cut in half, rounding fractions down. Fractional results rounded down to zero mean a stand must be contacted to be spotted.



Design Note:

This is the same effect as twilight (Rule 9.4)

Fog reduces maximum visibility to 4 inches. This is also the spotting distance for all target types, except stands with a daylight spotting distance of 6 inches or less must be contacted to be spotted.



Design Note:

This is the same effect as a moonlit night (Rule 9.1.2).

10.2.2 Movement

In mist, vehicle base movement allowances are halved. In fog, vehicle base movement allowances are quartered and personnel base movement allowances are halved.

10.2.3 Changing Conditions

The referee rolls a die at the start of each fog and mist game turn. On a roll of 1-3 it changes; on any other roll it remains unchanged.

The nature of the change is up to the referee, depending on the weather itself; however, the referee may use the following table as a guide by rolling a die again and consulting the table for the change in effects.

Once it clears, however, the referee may decide it has cleared for good or roll again the next turn to see if mist returns.

Die Roll	Effects
1-5	Fog turns to mist; mist turns to clear
6-10	Clear turns to mist; mist turns to fog

**Design Note:**

Mist and fog are often unstable weather conditions. On a warm clear day the sunlight will burn off the fog after an hour or two, and once it is gone it does not return. On a cooler overcast day fog will either remain in place or lift and descend suddenly and unpredictably. As a result, the referee may choose to change the numbers on the table shown above.

10.3 PRECIPITATION (RAIN & SNOW)

Rain and snow reduces visibility and movement and, depending on the duration, may produce mud or thick snow cover as well. There are three levels of rain or snow: light, steady, and heavy

10.3.1 Visibility and Spotting

Light precipitation reduces maximum visibility distance to 30 inches, and all spotting distances are cut in half, rounding fractions down. Fractional results rounded down to zero mean a stand must be contacted to be spotted.

**Design Note:**

This is the same effect as twilight (Rule 9.4) and mist (Rule 10.2).

Steady precipitation reduces maximum visibility distance to 15 inches, and all spotting distances are quartered, rounding fractions down. Fractional results rounded down to zero mean a stand must be contacted to be spotted.

Heavy precipitation reduces maximum visibility to 4 inches. This is also the spotting distance for all target types, except stands with a daylight spotting distance of 6 inches or less must be contacted to be spotted.

**Design Note:**

This is the same effect as a moonlit night (Rule 9.1.2) and fog (Rule 10.2).

10.3.2 Movement

In light and steady precipitation, vehicle base movement allowances are halved. In heavy precipitation vehicle base movement allowances are quartered and personnel base movement allowances are halved.

10.3.3 Changing Conditions

Depending on the scenario, rain or snow fall may remain constant or be variable. This is up to the referee, but, if variable, the referee may construct a chart similar to that suggested for mist and fog above.

10.3.4 Flooded Areas

As a result of extended rains, and depending on the scenario, the referee may choose to declare certain areas along rivers and creeks as flooded. Such areas may either be considered as impassable, or as deep mud (Rule 11.1.3), at the referee's discretion. In addition, flooded areas may block access to some bridges.

As a general rule, the area within 2" of an impassible flooded area should be treated as deep mud.

11 GROUND CONDITIONS

Precipitation and cold produce ground conditions which affect movement of stands on the table. These rules deal with three principal types of altered ground conditions: mud, snow cover, and ice.

11.1 MUD

There are three levels of severity of mud: light, moderate, and deep. Mud affects the movement of all stands, except those on hard surfaced roads. The effects of each type of mud condition are as follows:



Referee Note:

If rain continues for any length of time, it will produce mud. The longer the rain, the worse the mud, although the ground itself also has a lot to do with how much water it takes to create really difficult going. You will usually tell the players what the ground condition is at the start of the battle, and it will stay that way throughout. If it's raining steadily, however, after a certain number of turns you may make the mud worse.

Mud may also be caused by poor drainage, a high water table, or a spring thaw.

11.1.1 Light Mud

In light mud, all moving stands pay double movement costs in addition to any other movement costs they must pay.

Example: A tracked vehicle moving in woods would pay double movement costs for the woods and double again for the light mud. Thus, it would pay quadruple costs (i.e., 4" for every inch actually moved).

11.1.2 Moderate Mud

In moderate mud, all personnel stands pay double movement costs in addition to any other movement costs they must pay. All vehicles pay quadruple movement costs in addition to any other movement costs they must pay.

Example: A tracked vehicle moving in woods would pay double movement costs for the woods and quadruple again for the moderate mud. Thus, it would pay octupled movement costs or 8" for every inch actually moved.

In addition, all vehicles while moving cross country may become mired. (Rule 11.1.4)

11.1.3 Deep Mud

Deep mud has the same effect as moderate mud, except the chances of miring are greater. Wheeled vehicles, excluding halftracks, have a chance of miring when moving on dirt roads.

11.1.4 Mired Vehicles

At the end of each Movement Phase in which a moving vehicle has a chance to mire, check the following chart. Roll a die for the vehicle. If the die roll is equal to or less than the number indicated, it is mired.

Halftracks are considered to be wheeled vehicles for purposes of the chart except they are immune from miring on a dirt road.

Recovery vehicles are exempt from miring.

Miring Chart		
Vehicle	Moderate	Deep
Wheeled on dirt road	—	1
Wheeled/Halftrack in open	2	4
Tracked in open	1	2

Mired vehicles may not move or change facing until unmired. (Rule 11.1.5)

The die roll to mire is made at the end of a movement phase. If a vehicle moved across a patch of muddy ground and ended its move on safe ground the die roll is still made and if the vehicle mires it is placed half way across the muddy ground.

Example: A wheeled armored car is moving down a hard surface road. It must leave the road and detour around a wreck onto heavy mud. Even though it will start and end the turn on a hard surface road where it is a wheeled vehicle safe from miring, it still must check at the point where it attempts to regain the road. On a roll of a 1 to 4, it will be mired and placed at the midpoint of its movement through the mud.

Geographical Note: Climate And Seasons

The referee may impose weather and ground conditions depending upon the season and climate where the scenario is being played. An atlas will guide the referee in determining the weather condition for a particular season in a particular locale. As a general guide to the seasons use the following:

Central Europe

Spring tends to be wet and muddy. Summer is usually dry, but there are occasional rain storms. The autumn is rainy and muddy. Winter can be cold, with rain, snow and freezing conditions. The farther north and east one is, the colder winter tends to be.

Eastern Europe

Spring is always quite muddy due to the nature of the soil, and, particularly in the two or three weeks following the spring thaw, ground conditions will tend to be heavy mud. Summer is dry and in the steppe region in the south it can become very hot and dusty; however the occasional rainstorms can turn the ground to mud very quickly. Autumn is rainy and muddy, with the last two or three weeks in October usually being very muddy. Winter can be very cold with considerable snowfall, particularly in the northern areas.

Southern Europe/Northwest Africa

The winter and early spring tend to be muddy and wet, but there is little snowfall except in the mountains. The summer and fall are usually dry and occasionally dusty.

North Africa

The desert area tends to be dry year round, and often very dusty. There are infrequent rain storms in the fall and winter, some of which may be intense. Frequent low-lying depressions (often dried up lake beds—sometimes known as “sabkhas”) are marshy in the winter and dry the rest of the time.

Pacific

Most of the southwest Pacific has two sorts of weather: raining and not raining. Some areas (primarily the East Indies, New Guinea, and much of Melanesia) will be categorized by extreme heat as well. Because of the almost constant rain in some seasons, mud will be an important factor. The central Pacific and China coast areas are more temperate, while the north Pacific can be quite cold.

11.1.5 Unmiring Vehicles

A vehicle may be unmired in one of two ways: it may be assisted by another vehicle, of equal or greater weight class, or it may unmire itself.

If assisted by another vehicle, that vehicle must either push or tow the vehicle for a distance of at least one inch. If it does so without miring itself, the mired vehicle is free.

If attempting to unmire the mired vehicle without assistance, the vehicle must be issued a Hasty Advance order. It succeeds in unmiring itself on a successful die roll using the miring table above, but doubling all numbers. The number rolled must be higher than the doubled mire number.

Example: A tracked vehicle in the open mires on a roll of 1 or 2: to unmire itself, it would have to roll higher than a 4.

If successful the mired vehicle is moved one inch in the direction indicated by the movement order.

Unmired vehicles are free to move normally in the following turn, but may need to check again for miring.

11.2 SNOW COVER

There are two levels of snow cover treated by the rules: normal snow cover and deep snow cover. Snow cover affects the movement of all stands except those on plowed roads. The effects of each type of snow conditions are as follows:

11.2.1 Normal Snow Cover

Normal snow cover doubles all movement costs, except for vehicles on plowed roads and ski-mobile stands. Vehicles on plowed roads may move normally with their road base movement allowance. Vehicles moving on unplowed roads use their road base movement allowance but pay double movement costs to do so.

Ski-mobile stands pay normal personnel movement costs when moving through snow.

Example: A tracked vehicle moving in woods would pay double movement costs for the woods and double again for the snow cover. Thus, it would pay quadruple costs (i.e., 4" for every inch actually moved).

11.2.2 Deep Snow Cover

Deep snow cover doubles all movement costs for personnel stands, except for ski-mobile stands. Deep snow cover quadruples movement cost for all vehicles, except those moving on plowed roads and ski-mobile vehicles. Vehicles on plowed roads move normally with their road base movement allowance. Vehicles moving on unplowed roads use their road base movement allowance but pay quadruple movement costs to do so.

Ski-mobile stands pay normal personnel movement costs when moving through deep snow.

Example: A tracked vehicle moving in woods would pay double movement costs for the woods and quadruple again for the deep snow cover. It would, therefore, be paying octupled costs (i.e., 8" for every inch actually moved).

11.3 ICE

Ice doubles the movement cost of all vehicles, except for ski-mobile vehicles, on all terrain, including roads. In addition, the formation of ice may allow stands to move across frozen bodies of water.

The possible levels of lake and river ice, and the type of stand they may support, is measured using the same weight classes as for bridges (I-VI) with the addition of class 0. Class 0 ice is not open water, but water with a crust of ice too thin to support personnel, and, therefore, may only be crossed by vessels and amphibious vehicles.

One class of ice can blend into another level (up or down one) without necessarily showing any surface indications.

If a personnel stand attempts to move on lake or river ice which is not frozen enough to support it, the stand breaks through the ice. Personnel stands suffer a hit and are moved back to the last place on the lake ice capable of supporting them. Vehicles and towed weapons are removed from play.

In areas with snow cover, frozen lakes may be hidden by the cover and not visible, and will look as if they are a snow covered clearing. The movement effects of a snow covered lake are the same as for snow covered ground, not ice. In games where one side or both are unfamiliar with the terrain, these lakes will not be shown as such on the playing surface, but rather the referee will keep track of them on a map. The referee will check to see if a stand moving on to a snow covered lake will break through the ice. Stationary personnel stands, or any patrol stand, will be able to determine they are on a snow covered lake. They must be informed of this fact immediately by the referee when they end movement on the ice.