

14. Aircraft - Airplanes may be used for a number of functions including directing artillery fire and attacking ground units.

Overview: For a plane to be effective, it must a) fly over the battlefield, b) sight a target c) fire at the target, or communicate its position to friendly units.

14.1 Aircraft Movement: A plane that is to fly over the battlefield is placed at the edge of the table at the location that it is the start to its fly-over at the beginning of the full movement phase. The first flight path of each plane (or flight) starts at a location that is determined at random and must begin behind friendly lines and run parallel to an edge of the table. The start location of the flight path may be chosen by the owning player if a target is marked by colored smoke. At this time, the altitude of the plane is announced (very low, low, medium or high). High level flights (bombing or air cover) are for the most part beyond the scope of this game. Initiative is not used and planes are always placed at the table edge before any ground units move.

On the second and successive passes the angle of flight paths is determined by the owning player and need not be parallel to a table edge. The direction that the plane is pointed determines the direction of the fly-over.

After all movement is completed by ground units, the planes are moved over the battlefield in a straight line. The plane may sight elements from any point along the line of the fly over. In addition, ground elements may fire at the plane at any point(s) along the flight path.

Each plane is allowed 6 passes (consecutive turns) over the battlefield and a maximum of 5 turns of attack.

14.1.1. Aircraft may change elevations. An aircraft may go from low to very-low or from very-low to low in one turn. It takes one turn to go from medium to low, but 2 to go from low to medium. It takes 2 turns to go from high to medium and 3 to go from medium to high.

14.2. Sighting: For a plane to sight a unit, the owner of the plane announces its intention to sight an element and measures the distance from the flight path to the target. It then adds 100 for **very low** level, 200 for **low** level, 750 for medium altitude. The plane sights as an unbuttoned, moving observer. It sights during the Movement Sighting Phase only. The plane uses one sighting modifier die-roll for the whole sighting phase.

Planes may not sight targets in woods* (with leaves on the trees) however, they may drop bombs in wooded areas, assuming that the woods have been marked by ground units using colored smoke.

14.3. Attack from the air: A plane that has sighted a target may attack it using machine guns, auto-cannons, rockets or bombs. An enemy element may only be fired at

or bombed by a plane one turn after it is sighted, unless the aircraft is firing machine guns or auto-cannons, in which case it may fire immediately on sighting.

14.3.1. A plane may fire at a target which it has spotted using machineguns and cannons. The target must be within 100 of the flight path. The plane model is positioned 75 away from the target if flying at very low level and 200 away if firing at low level. The plane must be pointed in the same direction as it was originally pointed at the beginning of the fly over. All ground elements that did not fire in any of the phases of the present turn may fire at the plane, provided they have clear LOS and are not in woods*.

***Winter combat in deciduous woods do not block sighting from and to airplanes.**

14.3.2. All plane firing takes place after all ground fire.

14.3.3. MGs and cannons fired by the plane are fired like ground based weapons. The firer is considered half-moving. Each gun is rolled separately.

14.3.3.1. For firing (straffing) from very low level add +3 to the location hit on a target AFV. Location 13 is a **turret top** hit, while locations 11 and 12 are **deck top** hits. Other locations are what they are per the normal **Damage Location** table. Roll penetration and damage are per a normal shell hit.

14.3.3.2. For firing from **low level** use the **AFV Hit Locations From Low Aircraft** table to determine hit locations.

14.3.3.3. If scoring multiple hits on a target one hit may be applied per gun to each target in flight path line from the first target up to 200 for very low and 100 for low.

14.4. Firing Rockets - A plane armed with rockets may fire them at a target that it sighted in a previous turn. Rockets may only be fired from low level. Rockets are fired from a spot 200 from the target using the same procedure as firing machineguns and auto-cannons. Rockets must be fired in pairs but can be fired all in one pass or in a series of passes.

14.4.1. Rockets To-Hit - The base number to hit with a rocket is 10. Roll once per rocket. The modifiers to this are found on the **To Hit - Aircraft Rockets** table.

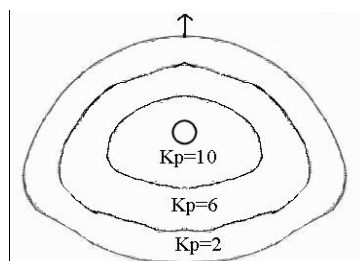
14.4.2. For hits on AFVs roll a **D10** per hit. A 4-7 will be a top deck hit. A 8-10 will be a top turret hit. For 1-3 roll another **D10** per normal hit locations on vertical aspects of vehicle. Refer to the **AFV Hit Locations From Low Aircraft** table.

14.5. Bombing - This is done differently than the abstract templates for artillery shells. There are just too many shells in an artillery barrage to find where each shell lands

and its effected area. However, a bomb kill zone is large enough to be handled at our 1:2000 ground scale. Each bomb will actually have a place where it lands and affects the area around it. The bomb zone will have a center ground zero crater area surrounded by bands of kill power destruction zones.

500 lb. GP bomb.

This is one of the most common size bombs and is as close to standard as we had in WWII. To use the deterministic bombing template:



500 GP bomb. Any vehicle or element under the inner circle it is destroyed. Each successive ring out from that has a killpower value vs. infantry or soft targets.

14.5.1. Dive Bombing. The dive bombing aircraft is placed at the scene of the bombing after all movement. If under attack from AA which causes "evasion" the aircraft must make an evasive

maneuvering attack.

For a normal dive bomb attack place a marker at the desired point of attack. Roll 1 D8 for direction of scatter. For distance from the marker in this direction roll a D10 times 5 GSU for scatter distance.

If evasive maneuvering roll 1 D8 for direction of scatter. For distance from the marker in this direction roll a D10 times 10 GSU for scatter distance.

14.5.2. Low Level Bombing. The level bombing aircraft is placed at the scene of the bombing after all movement. If under attack from AA which causes "evasion" the aircraft must make an evasive maneuvering attack. For a normal low level bomb attack place a marker at the desired point of attack. Roll a D10. If odd then the bomb will fall short. If even then the bomb will fall long. Multiply this number by 10 GSU if normal attack and by 20 GSU for evasive maneuvering attack.

Place the marker at this point. Then roll a D8 for scatter direction. Roll a D10 and multiply this by 5 GSU to find the distance of scatter.

After determining the scatter point place the center cross of the 500 lb. GP bomb template over this point. Roll percent (D100) dice to find which of the 24 possible bomb locations the bomb actually hits at. When this is found then any vehicle turret or troop under the gray center circle is destroyed. (GP penetration is 18 HE, but receives one attack per 100lbs of bomb weight.) Any part of an infantry stand/counter falling within the next HE killpower

band is subject to a killpower attack of 10. The next band has a killpower attack of 6 and the outer band has an attack of 3. Infantry only receive one attack per bomb and that is at the highest factor that covers the stand/counter. Unbuttoned vehicles are also subject to HE killpower and can lose their tank commander.

Notes on penetration of bombs or heavy shells.

Each hit by a heavy shell or bomb receives 1 D6 HE penetration roll per 100lbs (or part thereof) of shell mass. Thus a 500 lb. GP bomb would have 5 rolls to try to penetrate the top/deck/side/track of an AFV.

For 500 GP bombs vs houses - each house module that is within the template receives the maximum Kp damage as structural damage.

14.5.3. Bombing with bomblets. Aircraft armed with bomblets may drop these instead of bomb. Bomblets may only be dropped by aircraft performing level bomb attacks.

Bomblets disperse over an area and attack in the same manner as artillery fire.

14.5.3.1. The bomblet area is 50 x 100. This area scatters along the flight path in the same scatter distance as a bomb attack (10 x D10 in distance.)

14.5.3.2. Each box of bomblets has one attack on each element in the area under attack. Or one attack per 6 bomblets. Bomb attacks need the same series of D10 rolls as indirect artillery fire in order to hit, i.e. a '10' to possibly hit and second roll of a '1' or '10' to actually hit.

14.6 Anti-Aircraft (AA) fire - In order to fire at an airplane, a firing element must not have fired during the present game turn. Firing at planes takes place after all ground firing and may take place before or after a ground attack. The firing element may pick a spot along the plane's path to fire at the plane. If the firing is done before the plane attacks, it is taken care of and the results applied before the plane attacks the ground target. Otherwise, it is taken care of and the effects are applied after the ground attack.

14.6.1. An element in smoke or woods* cannot fire at an airplane.

*Winter combat in deciduous woods do not block sighting from and to airplanes.

14.6.2. To fire at a plane, look up the type of gun being fired. Measure the range to the plane and take into account the altitude of the target. After the range and altitude are cross-referenced and the % number is found, decimal dice are rolled to determine if there is hit or not. Roll one % dice attack per gun barrel on the attacking AA element.

14.6.2.1. AA guns must be set up in order to fire Anti-

Aircraft fire.

14.6.2.2. Auto cannons and machine guns can fire from moving tracked or wheeled vehicles but the percent chance to hit is halved.

14.6.2.3. Guns, machine guns and auto cannons may fire from moving trains but the chance to hit is reduced by 1/4. (75% of basic %.)

14.6.3. If a hit is scored then damage is done to the plane. The damage is the Attack number. This number can be less. Roll a **D6** as per the **Aircraft Variable Attack** table. Subtract this adjusted number from the aircraft Defense factor.

14.6.3.1. If the Defense factor is reduced to zero or less the aircraft is destroyed.

14.6.4. If the damage accumulated by the aircraft is equal to or more than half the Defense factor roll one time on the Critical Hit table.

14.6.5. If the damage accumulated by the aircraft is equal to or more than 3/4 the Defense factor roll a second time on the Critical Hit table.

14.6.6. All damage to an aircraft is permanent and cumulative. Each time an aircraft is hit more and more damage is done until the aircraft leaves the game or is destroyed.

14.6.7. Evasion of Anti-aircraft Fire. When attempting to hit an aircraft and the D100 roll is equal to or less than double the % number the attacking aircraft must make an evasive attack that turn if they decide to attack. If the point of attack is at a point after the aircraft's current turns attack then the aircraft must make evasive attack the following turn if the attack point is within 500 of the current attack point.

14.7. Air to Air Combat.

Aircraft engaging in ground attacks or flying protection for those making ground attacks may be attacked by other aircraft. Aircraft are evaluated as to maneuver ability, attack potency and defense. Aircraft can attack enemy aircraft in order to drive them away or destroy them. Players should prepare aircraft logs for each aircraft that will engage in air combat. Write down the **Maneuver** factor and **Defense** factor along side each aircraft as these may change due to damage. (The attack factor does not change.)

14.7.1. The Maneuver factor is a combination of speed and turning ability. This tells how well an aircraft can dog-fight. The higher the maneuver value the better the chance the aircraft can be in a position to attack an enemy aircraft during a dog-fight. Along with this factor there are a few modifiers that will give a better chance to attack.

14.7.1.1. If the aircraft has changed altitude from a higher altitude level to a lower one there is a +2 bonus added to

that plane's maneuver total for that turn.

14.7.1.2. If the aircraft is in the process of a bombing run or has bombed in the previous turn there is a -2 added to the plane's maneuver total for the turn.

14.7.2. The Attack factor tells how much firepower an aircraft can put out. If there are two numbers as in (6,1) the second number is the firepower the tail gunner can deliver to an attacking aircraft on his tail.

14.7.3. The Defense factor is the amount of damage from firepower the aircraft can absorb before being destroyed.

14.7.4. The process for one aircraft attacking another is very simple. The attacker with the aircraft with highest Maneuver factor total can decide to engage in a dog-fight or not. If not the plane must exit the map and not return. If he decides not to leave then the attack begins.

14.7.5. The Air to Air Attack - Each player rolls one D10 per aircraft. Add this number to the Maneuver factor of the plane. Also add any of the Air Combat factors that apply. The highest total number may have the *combat advantage*. If the total of one plane is 2 or more higher than the other number that plane has a '**tail**' on the other in the next round of combat. The aircraft with the combat advantage may decide to attack or leave the battle. (If both number totals are equal then both must attack each other simultaneously.) If one with the advantage leaves the battle it is removed from play for the rest of the game. If it decides to attack then...

14.7.6. The **Attack** factor of the attacking aircraft is subtracted from the defender's Defense factor. But first modify the Attack factor. Roll a D6 per the firepower **Aircraft Variable Attack** table and the Attack factor may be modified i.e. lessened. Subtract this modified amount from the defender's Defense factor. If the defense factor is reduced to zero or less the defender's aircraft is destroyed.

14.7.7. If the damage accumulated by the aircraft is equal to or more than half the Defense factor roll one time on the Critical Hit table.

14.7.8. If the damage accumulated by the aircraft is equal to or more than 3/4 the Defense factor roll a second time on the Critical Hit table.

14.7.9. If an aircraft is **tail**ing an enemy aircraft it may make an attack or instead of attacking the aircraft may decide to leave the battle and exits the game board not to return.

14.7.10. If an aircraft is being tailed has an Attack tail gun factor (second number of an Attack factor pair) it may fire at a **tail**ing enemy aircraft.

14.8. There are two Air to Air Combat rounds per turn. In each round players roll a D10 for each plane to see which one has the combat advantage. If a plane was

‘tailing’ the other plane the previous turn it adds this bonus (+2) to his maneuver factor and D10 roll. Depending on die rolls it is possible for the advantage to change hands each combat round.

14.9. For multiple aircraft on each side the aircraft are all lined up on a surface. The aircraft with the highest maneuver value chooses one of the enemy’s planes as an opponent. Then the aircraft with the next highest chooses his opponent. (If there are equal maneuver factors the players alternate choices.) Once each plane has one opponent the left over planes may exit the game board or may double up on any of the enemy’s planes that have only one opponent. A second plane is the wing-man and helps (+1) the first plane gain a Combat advantage. But only one plane may actually fight another plane per combat round.

14.9.1. If an aircraft no longer has an opponent after a round of combat it must engage any enemy aircraft that also has no opponent. If there are none it may become a wing-man of any friendly aircraft that has only one.

14.9.2. If no aircraft are **tailing** an enemy in a one on two dog-fight the player that has two planes in the fight may choose which one will be doing the attacking and which one is the wing-man.

14.10. Turns engaged in dog fight combats count as the aircraft’s 5 allotted combat turns over the battlefield. If aircraft uses all its turns and the battle is not resolved it runs out of ammunition and its attack factor goes to zero.

