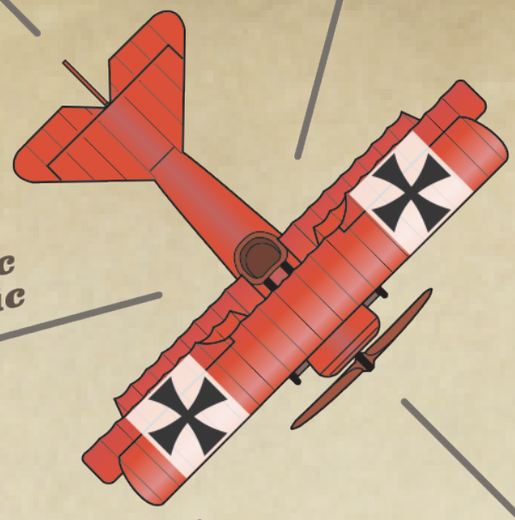
FORSAGE GAMES



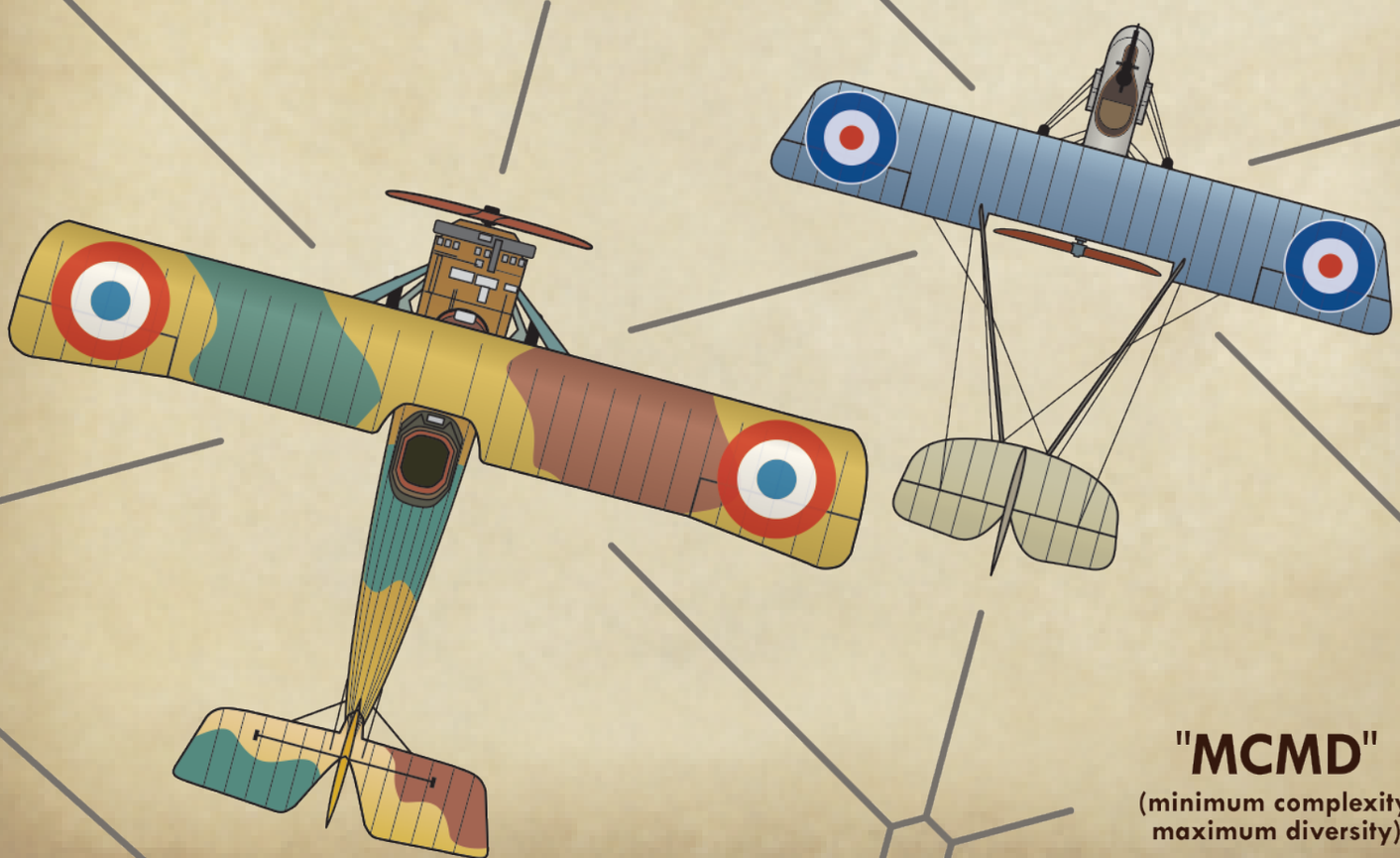
Predrag Lazovic
& Dragan Lazovic

TRIANGLE SYSTEM

BOARD GAME

AGE of DOGFIGHTS: WWI

RULES AND INSTRUCTIONS



"MCMD"
(minimum complexity, maximum diversity)

AGE of DOGFIGHTS: WWI

In Age of Dogfights, First World War fighters and bombers engage in fierce battles. Simple rules for movement and firing include all the most important features of WWI aircraft: speed, agility and firepower. Battles are fought at six altitude levels, and take into account the differing abilities of each aircraft type in terms of climbing and diving speeds. Gameplay also takes into account the effects of the sun's position on firing accuracy, the ability to fly into clouds to evade the enemy, and the effect of wind. The gyroscopic effect of rotary-engined planes is also accounted for, allowing them to turn more sharply. As pilot skills were also an important factor, the game also includes rules for rookies and aces.

Before playing Age of Dogfights for the first time, we recommend reading this entire rulebook, as it includes many illustrated examples, as well as explaining numerous optional rules and different game modes. Once you have mastered the basics, the short summary on a separate sheet provides a quick reference for when you're playing the game. You will find the summary particularly easy to grasp if you have already played other Forsage games that use the Triangle movement system.

Text Color Coding

Important rules are highlighted using blue text. Key terms are in **bold**. Text and diagrams with a white background are used for examples (secondary information). The text in *italics* is used for historical references and comments (auxiliary information), and is unimportant for playing the game.

Box Contents

Age of Dogfights includes three bi-fold board segments, four board extensions, 78 plastic aircraft tokens, 105 plastic altitude stands, three plastic tilt compensators, three initial position markers, 30 control panels, 130 sliders, 24 photo markers, 30 bomb markers, 24 ace/rookie markers, 36 plastic damage markers, 10 plastic cloud markers, one sun indicator, one wind indicator, 12 plastic task zone markers, six dice, rules summary sheet, solo rules booklet and this (main) rulebook.

Board and Extensions

The board is covered with a grid of equilateral triangles with tiny hexagons at their intersections (points). The aircraft tokens move along the dotted lines between these, and the distance between two adjacent points is referred to as '1d'.

The main board without extensions is referred to as the **Combat Zone**. Board extensions are placed alongside the main board, and each contains a **Patrol Zone** at the center, for planes that have not yet entered the Combat Zone. Each extension has four **Access Points** along its edges where plane tokens are placed just before entering the Combat Zone.

Tokens and Stands

Germany, France and Britain had the most powerful aerial fighting forces during WWI. For each of these nations, Age of Dogfights includes 12 **fighters** (aircraft tokens numbered 1–12), three **scouts** (numbered 13–15), three **bombers** (16–18), two **general purpose aircraft** (19–20), two **light bombers** (21–22), two **floatplane fighters** (23–24) and two **torpedo bombers** (25–26). Some of these can perform multiple roles: dogfighting, bombing and reconnaissance.

The aircraft tokens are made of either black plastic (German) or white plastic (French and British), each with a sticker showing an aircraft illustration and designation number, as well as both basic and special characteristics.

Basic characteristics of all aircraft types are **armament** (number of fixed and/or ring-mounted machine guns), **speed**, **agility** and **service ceiling**. Only certain types of aircraft have special characteristics, such as **fast climbing** or **gyroscopic effect**.

Aircraft type: Fokker Dr.I

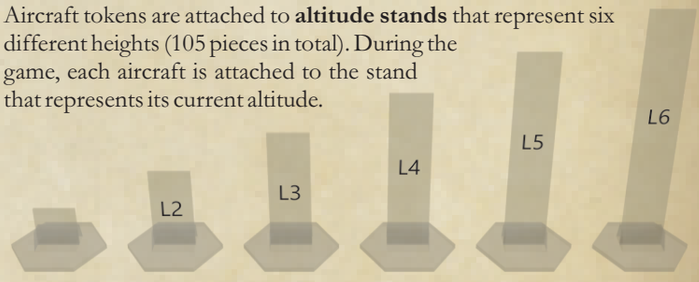
Designation number: 4

Basic characteristics
- Armament: II (2 fixed MG)
- Speed: 5
- Agility: IV
- Service ceiling: L6

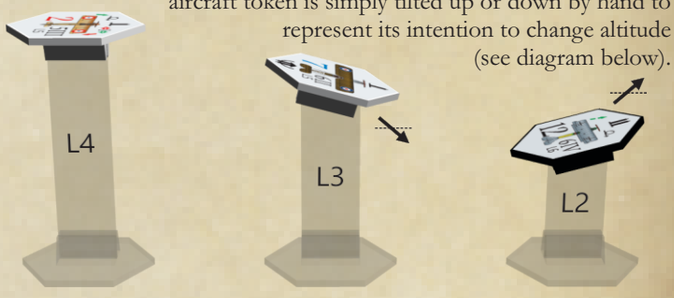
Special characteristics
- Fast climbing
- Slow descending
- Gyroscopic effect:
- Aerobatics

- I / II / III - one/two/three **fixed** machine guns
- one/two **flexible nose** machine guns
- one/two **dorsal** machine guns
- one **ventral** machine gun

Aircraft tokens are attached to **altitude stands** that represent six different heights (105 pieces in total). During the game, each aircraft is attached to the stand that represents its current altitude.



When either climbing or descending (rather than in level flight), the aircraft token is simply tilted up or down by hand to represent its intention to change altitude (see diagram below).

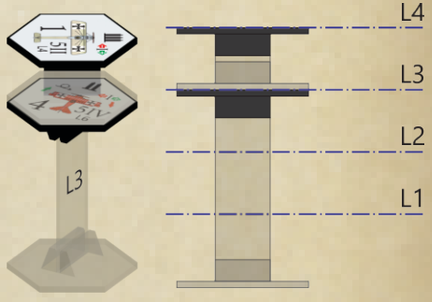


Flying Above/Below Other Aircraft

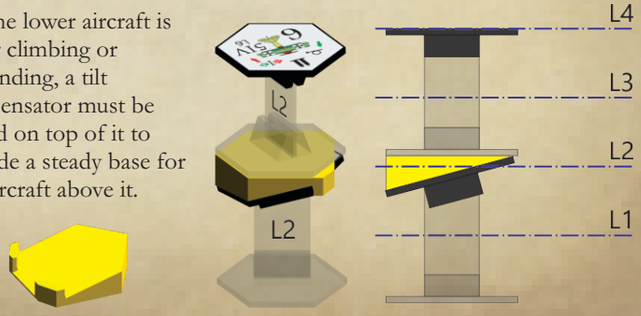
During the game, two or more aircraft can occupy the same point on the board, provided they are at different heights. To represent this, the aircraft tokens are simply stacked on top of each another, together with their stands, as shown in the diagrams below.

- Here, the top aircraft is at Level 4 and the lower is at Level 3, so the top aircraft must be temporarily fitted with a Level 1 altitude stand.

(L3+L1=L4).



- If the lower aircraft is either climbing or descending, a tilt compensator must be placed on top of it to provide a steady base for the aircraft above it.



Initial Position Markers

When considering multiple paths for aircraft movement, to mark the initial position and direction of the aircraft, use these markers.

Control Panels and Sliders

There are two or three aircraft of each type in the game, and all aircraft of one type share the same Control Panel. The top of each panel shows an illustration of the aircraft and all of its characteristics. The lower section shows the designation number of each individual aircraft, with slots for various sliders and markers.

All Control Panels contain rows of red rectangles with machine gun symbols and numbers. The number on the far-left red rectangle indicates how many bursts a machine gun can fire. If the aircraft has both front and rear machine guns, the Control Panel contains several rows of red rectangles.

Control Panels for fighter aircraft also contain rows of green squares. The number on the far-left square indicates how many times that aircraft can use full engine throttle.

At the start of the game, plastic sliders of the matching size are placed on all the far-left rectangles of each red and green section. Each time the plane fires, the large slider is moved one slot to the right. When the last burst is fired, the slider is removed from the Control Panel. Each time a plane flies at full throttle, the small slider is moved one slot to the right.

The diagram below shows that aircraft number 7 has fired twice from the front and rear machine guns, and used full throttle three times. Aircraft 8 fired three times from the rear machine guns (all rear ammunition is spent) and used full throttle once. Aircraft 9 has neither fired nor used full throttle.

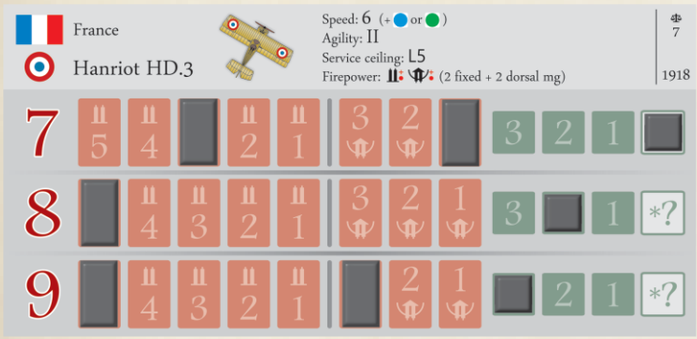
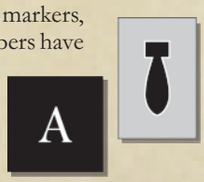


Photo and Bomb Markers

Bombers' Control Panels include slots for Bomb markers, while scouts, general purpose aircraft and light bombers have both Bomb and Photo markers.



When an aircraft takes a photo of a Task Zone (A, B or C), a corresponding **Photo marker** is placed on its Control Panel.

Bomb markers are placed on Control Panels at the beginning of the game. When the aircraft bombs a target, the marker is placed on the appropriate Task Zone on the board.

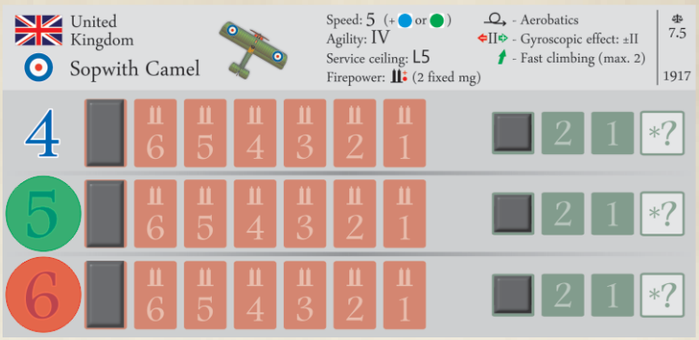
Damage Markers

As aircraft are damaged during combat, colored markers are placed on top of the aircraft to indicate the damage type.

Ace/Rookie Markers

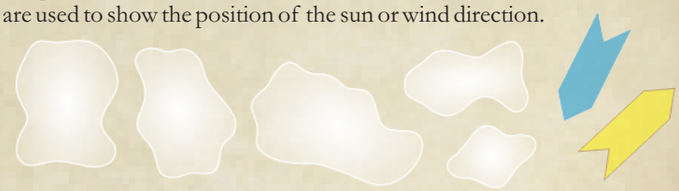
Each player has six red and six green circular markers. **Red** circles are used to mark fighter planes with exceptionally skilled 'Ace' pilots. **Green** circles mark fighter planes with inexperienced 'Rookie' pilots.

The picture below shows a Control Panel at the beginning of game, with aircraft 4 as 'average' pilot, 5 as Rookie, 6 as Ace.



Cloud Markers and Sun/Wind Indicators

Cloud markers (white) represent thick clouds where aircraft can temporarily hide from enemy fire. Sun (yellow) and Wind (blue) indicators are used to show the position of the sun or wind direction.



Task Zone Markers

Task Zone markers are tinted plastic rectangles or ship shapes, used to mark zones to be bombed or photographed. Rectangles are placed between the white dashed rectangles on the board and 'ships' are placed across any four adjacent points, according to agreed or specified positions.

Dice

The **blue** die is numbered **-1**, **0**, **0**, **+1**, **+1** and **+2**, while the **green** die is numbered **0***, **+1***, **+2**, **+3**, **+4** and **+5**. They are both used when calculating aircraft movement.

The two **red standard** dice are used when calculating machine gun fire.

The **multicolor** die is used for determining aircraft damage. It has two blue sides, two orange, one red and one green.

General Rules

Age of Dogfights is designed primarily for two players, but can also be played solo (see separate booklet) or by four players (see page 16).

There are three basic game modes (with variations): Dogfight, Reconnaissance and Bombing. In general, Dogfight mode involves fighter planes, Reconnaissance mode adds aircraft carrying camera equipment, and Bombing mode adds aircraft that can carry bombs.

All battles take place in the Combat Zone, always entered via the Patrol Zones. Aircraft may only leave the Combat Zone if they are either damaged or have run out of ammunition. Once an aircraft leaves the Combat Zone, it cannot re-enter.

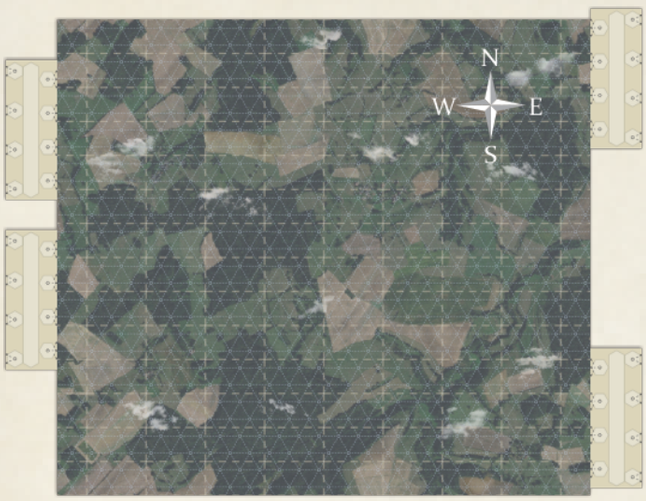
Each player may normally have no more than six fighter planes in the Combat Zone at any time, though players may choose to agree on a different number.

If a player has no aircraft in the Combat Zone, they must bring in at least one plane from the Patrol Zone in the next round, provided they have them remaining.

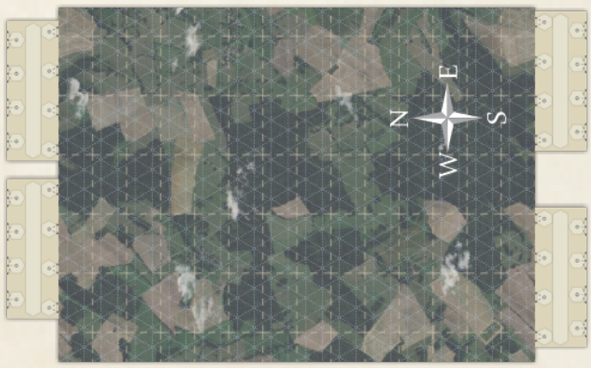
Game Setup

The complete board consists of all three bi-fold segments, but players wishing to play a short game with fewer aircraft can choose to assemble the board from only two segments.

Players start the game on opposite sides of the board, along either the longer (east-west) or shorter (north-south) edges. Each player places two board extensions anywhere along their side, ensuring that the dotted lines line up with those on the main board (see examples below).



The picture below shows a 'shortened' board, where players have chosen northern and southern starting points.



One player must choose to play German aircraft and the other chooses French and/or British. The number of aircraft must be agreed between the players.

Example: The two players choose Dogfight mode and agree to start with nine aircraft each. One selects German fighters: Fokker Dr.I (numbers 4, 5 and 6), Fokker D.VII (10, 11 and 12) and Aviatik DFW C.V (13, 14 and 15) scouts. The other player combines French and British fighters: Hanriot HD.3 (7, 8 and 9), Sopwith Camel (4, 5 and 6) and S.E.5 (10, 11 and 12). The first player chose scouts because they have a machine gun that fires backwards, and their performance characteristics are good enough to engage effectively in battles with fighters.

Players then take the Control Panels that match their chosen aircraft and place all sliders on their starting positions.

Players finally choose any four of their aircraft tokens to attach to stands (players may choose any starting altitudes) and place them on their four Access Point positions. All remaining aircraft are then placed in their Patrol Zones, without stands.

After agreeing who is to move first, the first player then rolls either a blue or green die and moves the aircraft with the lowest designation number from its Access Point. They then roll the blue or green die again and move the next aircraft, continuing until all of their Access Points are empty. The other player then does the same with their own aircraft.

The diagram below shows aircraft tokens correctly positioned on Access Points. They are all on stands of different altitudes (L2 to L5).

Round Sequence

During each round, all aircraft in the Combat Zone must be moved, and all those on Access Points must be brought into the Combat Zone by moving them, starting with the one with the lowest number.

Following this, players may then move another one or two aircraft from the Patrol Zone to the Access Points if they wish.

If any aircraft is in a position to fire after completing its movement, the firing procedure is performed immediately.

Each **round** comprises one player's turn, followed by the other. In their turn, the first player moves all of their aircraft that can be moved, followed by offensive firing if given the opportunity. The other player then repeats the process, and the two alternate until the end of the game.

Aircraft Movement

During real air combat, aircraft perform complex maneuvers both horizontally and vertically. In Age of Dogfights, altitude is represented by six different heights (L1–L6), and aircraft can change altitude (climbing or descending) multiple times, as described on the next page.

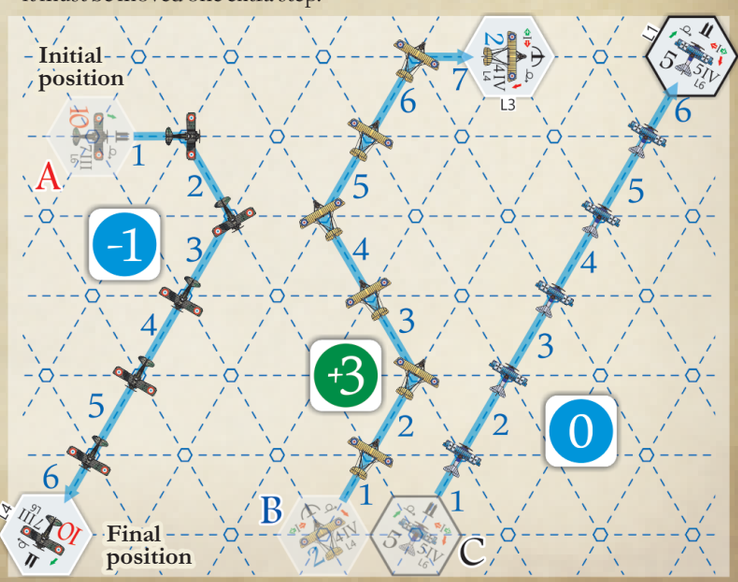
To determine the number of spaces ('d') an aircraft can move, fighters can choose to roll either the blue or green die, while all other aircraft types must choose the blue die. The blue die represents the normal range of aircraft speeds, while the green die has larger numbers and is used when a player wants to move a fighter as fast as possible. This use of full throttle is limited however, as indicated by the number on the far-left green square on the fighter's Control Panel.

Horizontal Movement (Level Flight)

Each **step** of aircraft movement must be to a neighboring point either directly ahead or 60° to left or right (see diagram below). When moving, take care to orient the aircraft token properly at each point.

The number of steps an aircraft will move is calculated by adding the number rolled on the blue or green die to its **speed** number, together with any other modifiers (it must move the maximum number of steps).

If an aircraft moves directly forwards in a straight line for the entire round, it must be moved one extra step.



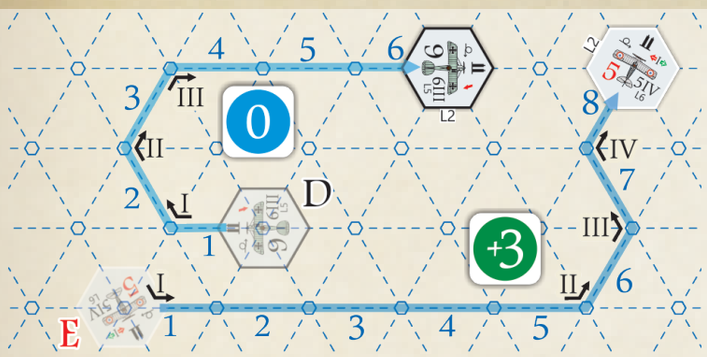
In the example above, all aircraft are moving horizontally (i.e. without ascending/descending), but at different altitudes. The number of movement steps for each aircraft is:

- Aircraft **A**: **7** (speed) - **1** (die) = **6** steps
- Aircraft **B**: **4** (speed) + **3** (die) = **7** steps
- Aircraft **C**: **5** (speed) + **0** (die) + **1** (straight movement) = **6** steps

Aircraft cannot pass through others if they are at the same altitude. Also, movement must never end directly in front of another aircraft if it is at the same altitude and neither climbing or descending. If an aircraft is climbing, others must not end their movement at the point directly in front of it if they are one level higher, or one level lower if it is descending.

Changing Direction (Agility)

During movement, aircraft may change direction a limited number of times. The basic characteristic of **Agility** (indicated by Roman numerals on the aircraft token) shows how many times an aircraft can change direction in one round.



In the example above, aircraft **D** turned three times (the maximum for that aircraft type) to the right. Aircraft **E** turned left in the first step, then left twice more, then once to the right, making a total of four (the maximum for that aircraft type).

Gyroscopic Effect

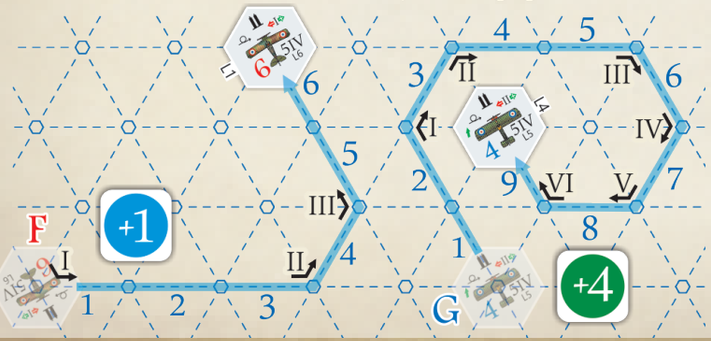
During WWI, rotary engines were common, and had cylinders that rotated with the propeller. The resulting gyroscopic effect (several factors) made it difficult to turn to the left. In Age of Dogfights, aircraft with rotary engines account for this **gyroscopic effect** (⇦I⇨) by being able to make one extra turn if turning exclusively to the right, but one turn less if turning solely to the left.

The **Sopwith Camel** had a particularly pronounced gyroscopic effect due to its heavy engine, fuel tank and armaments being in the far front section of the aircraft. Its maximum number of turns therefore increases/decreases by two (⇦II⇨).

For those aircraft with the propeller positioned behind the engine (known as a 'pusher' configuration), such as the **Airco DH.2**, the gyroscopic effect is reversed (⇦I⇨).

If a rotary engined aircraft turns both left and right during its movement in one round, the gyroscopic effect is ignored.

In the example below, aircraft **F** has a rotary engine. It combined straight steps and left turns, so could make a total of IV-I=III turns. Aircraft **G** (Sopwith Camel) made only turns to the right, so could make a total of IV+II=VI turns. The Sopwith Camel is the only aircraft that can therefore make a full 360° turn in one move, but only if turning right.



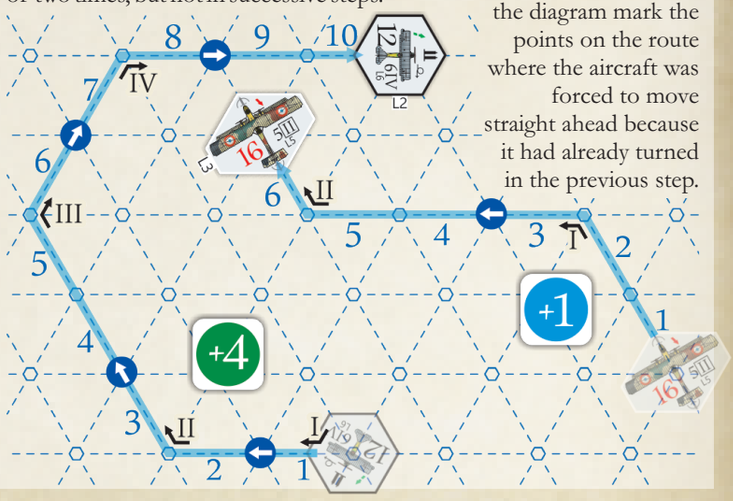
Limited Turning Radius

As in real life, the faster an aircraft is moving, the larger its turning radius. Therefore, whenever an aircraft has 10 or more movement steps to take, it cannot make two turns without a straight movement step in between.

Some bombers, because of their size and sluggishness, cannot make consecutive turns regardless of the total number of steps in a move. These aircraft markers include a Roman numeral indicating the maximum number of turns allowed, written within a square (II).

In the example below, the fighter turned right in the first step and then three more times, but with at least one straight movement step between each. The bomber changed direction its permitted maximum of two times, but not in successive steps.

The ➔ symbols on the diagram mark the points on the route where the aircraft was forced to move straight ahead because it had already turned in the previous step.



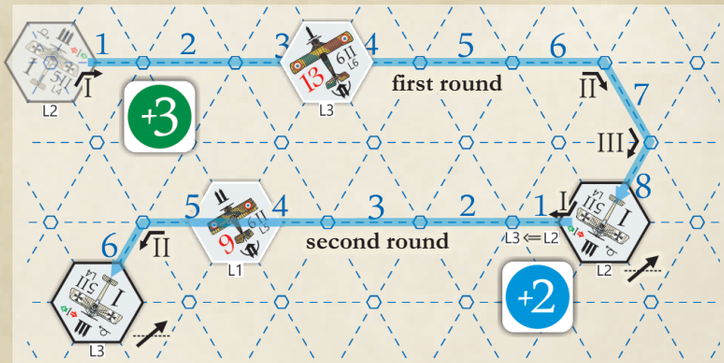
Changing Altitude

For an aircraft to change altitude, the player must first tilt its nose up (↗) or down (↘) at the end of its last movement step. It is then permitted to change altitude at the start of its next turn. Once tilted, the aircraft must change altitude in the next round.

Climbing

If an aircraft is tilted into the climb position (↗) at the end of its movement, at the start of its next round it must be removed from the previously-used altitude stand and placed on the next higher one (for example, from L3 to L4). Following this first step of changing the stand, the aircraft must then move at the same altitude for the remaining steps of the current round. On the final movement step of this round, the player may again choose to tilt the aircraft into the climb or descent position, ready to change altitude at the start of the following round.

Aircraft always lose some speed when climbing, so the total number of movement steps is reduced by one in this round.



In the diagram above, the aircraft begins its first round at altitude level L2. After rolling +3 on the green die, it moves **5** (speed) + **3** (die) = **8** steps. At the last point of this movement, the aircraft tilts its nose upwards (↗ , ready to climb at the start of its next round). As the first step of the next game round, it changes the altitude stand from L2 to L3. After rolling +2 on the blue die, it then moves **5** (speed) + **2** (die) - **1** (climb) = **6** steps.

As the final step of the second move, the player tilts the token upwards again, intending to climb to L4 in the third round. Note that in the first round, the aircraft flew underneath the French aircraft (13) at level L3, and in the second round it flew over the French plane (9) at L1.

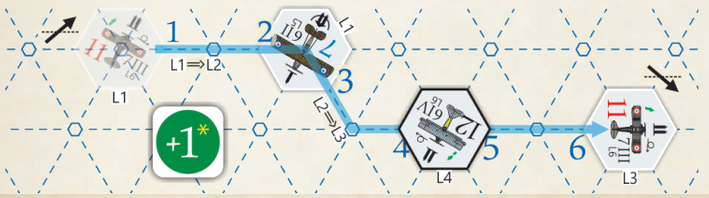
Fast Climbing

Aircraft can normally climb no more than one altitude level per round. The only exception to this is those aircraft with the **fast climbing** special characteristic. These can climb either two or three levels per round, according to the symbol:

= maximum of 2 levels = maximum of 3 levels

During such a round, the total number of movement steps is reduced by the number of climb levels: either two or three. When moving, the first altitude change is made in the first step, the second on the third step, and the third (if applicable) on the fifth step. For this reason, an aircraft must move at least three steps in that round in order to climb two levels, or at least five steps to climb three levels (taking into account the speed loss due to climbing).

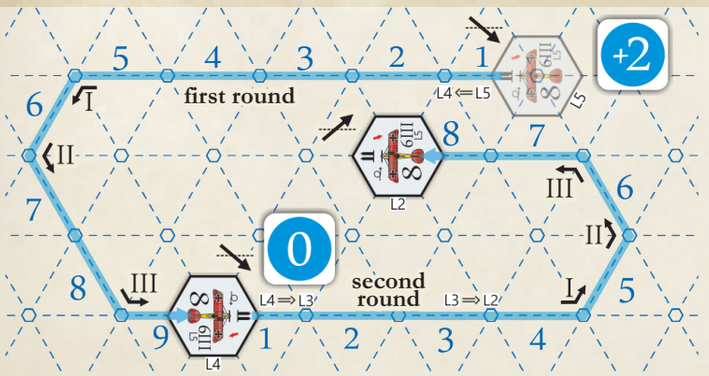
The example below shows how a French SPAD S.XIII climbs from L1–L3. At the end point of the movement, the player tilted the plane's nose down to indicate an upcoming descent. During the movement, it passed above the British aircraft and below the German aircraft, with movement steps **7** (speed) + **1** (die) - **2** (climb) = **6**.



Descending

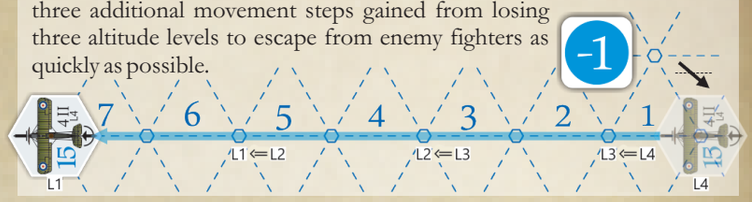
If an aircraft was tilted nose down ( ) on the last step of the previous move to indicate a descent, it can then descend either one, two, or three altitude levels in the current round (unless limited – see Slow Descending below). As with climbing, the first altitude change is made in the first step, the second on the third step, and the third (if applicable) on the fifth step. When losing altitude, aircraft naturally gain speed, so the total number of movement steps is increased by one for each level the plane descends.

As when climbing, the player may again choose to tilt the aircraft into the climb or descent position on its last movement step, ready to change altitude at the start of the next round. The **exception** to this is that if the aircraft has just descended three levels in its round, it cannot be moved into the climb position at the end of the round, *as doing so would put too much strain on both the airframe and the pilot.* It must either remain in level flight during the next round, or continue descending.



In the example above, the aircraft was already tilted nose down ( ) at the beginning of the first round. During this round, it first descended from L5–L4, then moved **6** (speed) + **2** (die) + **1** (descent) = **9** steps. The stand was of course replaced in the first step. At the last point of this movement, the aircraft again tilted its nose downwards ( ). In the second round, it descended from L4–L3 in the first step, then one more level (L3–L2) on the third step, moving **6** (speed) + **0** (die) + **2** (descent) = **8** steps. At the last point of the second round, the player tilted the aircraft up, indicating their intention to climb to L3 in the third round.

In the example below, the aircraft descended from L4–L1, flying in a straight line, moving **4** (speed) - **1** (die) + **1** (straight movement) + **3** (descent) = **7** steps. The scout in this example has effectively used the three additional movement steps gained from losing three altitude levels to escape from enemy fighters as quickly as possible.



Slow Descending

Due to their fragile construction, some WWI aircraft had a tendency for wings to break off during steep descent, which is why the maneuver is unavailable for these planes. In Age of Dogfights, some aircraft types have the slow descending ( ) special characteristic. These may descend a maximum of two levels in a single round, rather than three. Due to their heavy weight, all multi-engine bombers have this characteristic.

Service Ceiling

Although Age of Dogfights uses six altitude levels, each aircraft type has a service ceiling (Lx), indicating the maximum altitude stand height it can use. When an aircraft reaches its service ceiling, it cannot tilt up.

Even for aircraft permitted to reach L6, they cannot climb to L6 from L4 or lower in a single round, except for aircraft with the fast climbing characteristic of 'maximum 3'. These can climb from L4 to L6, but not from L3 to L6.

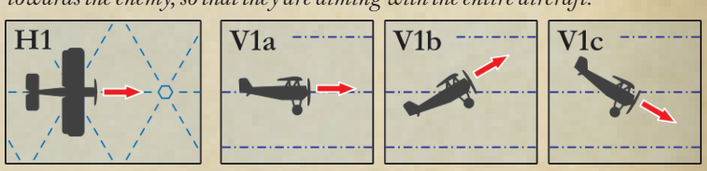
Armament - Firing

At the start of WWI, aircraft were used mainly for reconnaissance and to guide artillery fire, so many were not even armed. During encounters, pilots often fired at the enemy using a handgun or rifle. Soon, moveable machine guns were added, from which a second crew member could fire, being careful not to hit their own propeller, wings, tail, and so on. Things only improved significantly with the introduction of synchronized fixed machine guns that fired through the rotating propeller. Some aircraft retained moveable machine guns, but they mostly served for defense.

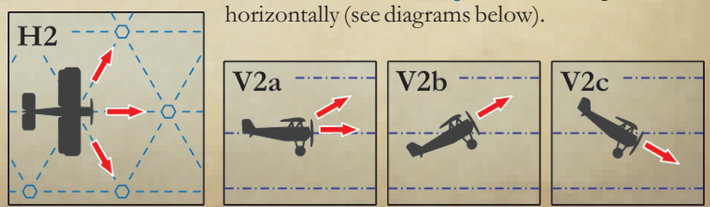
Machine Gun Positions and Firing Directions

Fixed machine guns are the main weapon for fighters and scouts. They are located in the front of the aircraft. *These were normally operated by the pilot. Some types were mounted on the upper wing and fired above the propeller, while some were mounted on the fuselage and fired through the propeller. Near the end of the war, almost all fighters had two, and only some older types had a single, fixed machine gun. The only exception was the Fokker E.IV, which had up to three fixed machine guns.*

Fixed machine guns fire straight ahead along the longitudinal axis of the aircraft (see diagrams below). *When firing, the pilot points their plane towards the enemy, so that they are aiming with the entire aircraft.*

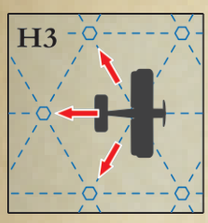


Flexible nose machine guns (one or two) were mounted on bombers, but also on some scouts and fighters. They were mainly used to defend against enemy aircraft attacks. In Age of Dogfights, the only fighter with such a machine gun is the British Airco DH.2. These can fire in all three forward directions and can also tilt to fire upwards as the plane flies horizontally (see diagrams below).

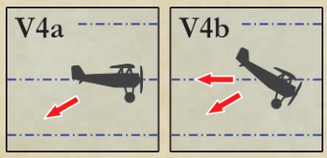


When the aircraft is climbing or descending as shown in diagrams V2d and V2e, it cannot fire in the red crossed (×) directions.

Dorsal machine guns (one or two) are mounted on all scouts and bombers, but also on some two-seater fighters, such as the Hanriot HD.3 and Bristol F.2. They are controlled by a second crew member. They are on moveable mounts, so can fire in all three backward directions, as well as upwards when the plane is either flying level or tilted to climb (see diagrams below).



Ventral machine guns are only present on some large bombers. In Age of Dogfights this is only the British Handley Page O/400, where they serve solely for defense. As with dorsal machine guns, ventral (bottom mounted) guns can fire in all three backward directions (see H3 above), but only downwards (see V4a/V4b).



Offensive Firing

In real air combat, aircraft constantly fly in intertwined routes, firing at each other as soon as the opportunity arises. In Age of Dogfights, this continuous movement is divided into rounds. One round occupies a short period of time (around 10 seconds) and when an aircraft attacks an opponent during their turn, it is classed as offensive firing.

Applying the rules for moving and firing, an aircraft of any type may be in a position to fire offensively. However, because of their size and sluggishness in real battles, bombers cannot approach and attack smaller aircraft. Therefore, in the basic Age of Dogfights rules, bombers cannot perform offensive fire, and as a reminder of this, their machine gun icons are printed in gray. For a more realistic (and more complex) optional rule, see page 12.

For an aircraft to fire offensively, it must be in a **firing position** after the last step of its movement path. To resolve offensive fire, roll the two standard (red) dice, add the numbers together, then consult either Column A or Column B of the Firing Outcome Chart on page 8, as instructed in the following chapters. In all cases, Column A gives a greater likelihood of inflicting damage.

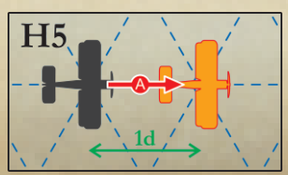
Several aircraft may wish to fire during a single round, but each must do so as soon as it reaches its desired firing position. Other aircraft are then moved, one by one, stopping to fire if desired, before moving on to the next aircraft. Some positions will allow only fixed and flexible nose machine guns to fire, while others will permit only dorsal or ventral machine guns. Each possible firing position is described under the headings below.

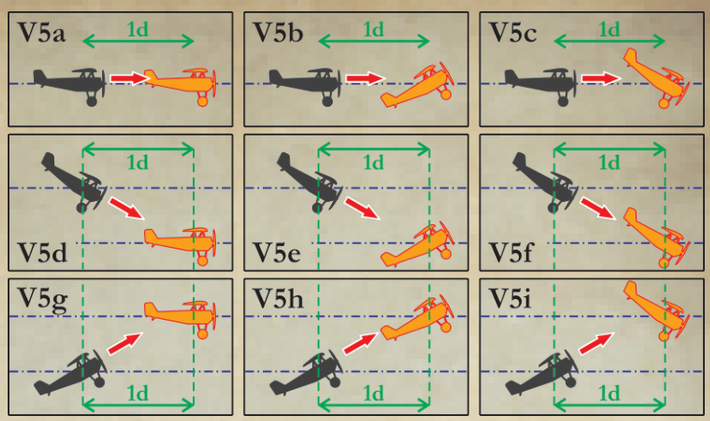
'H' (horizontal) diagrams show a view from above, while 'V' (vertical) diagrams show a side view (the letters A or B on the arrows indicate which chart column should be referred to). A gray silhouette represents the firing plane, while the orange one represents the target aircraft.

Fixed MG - Strictly From Behind

The best firing position for a fixed (forward-firing) machine gun is from directly behind the target aircraft, facing in the same direction, at a distance of 1d. Because this type of gun cannot rotate, the attacker must be pointing directly towards the target.

The firing aircraft and the target may be at the same altitude (V5a–V5c) or at adjacent altitude levels. When at adjacent levels, the firing aircraft must be tilted towards the level of the target aircraft (V5d–V5i).



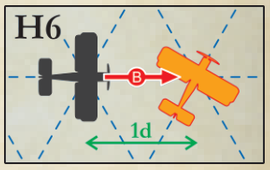


As shown in the diagrams, the target aircraft may be in horizontal flight, or either climbing or descending.

To resolve attacks from the above positions, roll the red dice and consult **Column A** in the chart. Fighters/scouts with fixed machine guns may fire in this way.

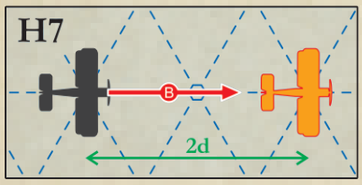
Fixed MG - Angled From Behind

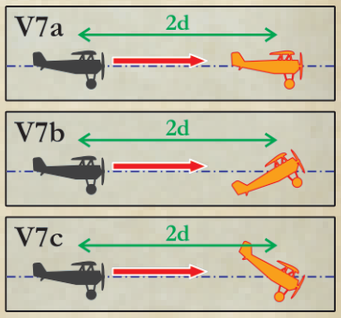
As with the 'strictly from behind' position above, both aircraft may be at either the same or adjacent altitude levels, at a distance of 1d (see V5a–V5i). Because the target aircraft is effectively flying past the attacker, there is less time to aim, so to resolve these attacks, roll the red dice and consult **Column B** in the chart, which reduces the likelihood of achieving a hit.



Fixed MG - Far From Behind

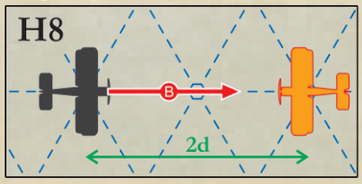
In this case, the firing aircraft is at a distance of 2d, strictly behind the target, and must be facing towards the target (see H7). Firing between different altitudes from this distance is not permitted, as it would be extremely unlikely to hit the target, though the target aircraft may be climbing or descending (V7a–V7c). To resolve these attacks, use **Column B** in the chart.

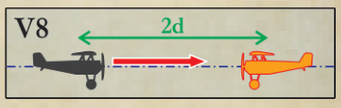




Fixed MG - Frontal

Frontal attacks, with both aircraft flying directly towards each other (H8) are permitted only at a distance of 2d. Both aircraft must be at the same altitude and in horizontal flight (V8). To resolve these attacks, use **Column B**.

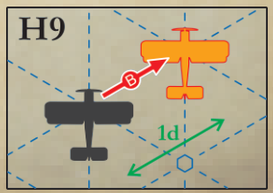




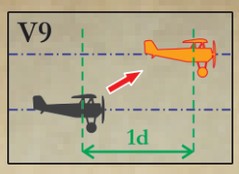
Flexible Nose MG (Positions)

A flexible nose-mounted machine gun can also be temporarily locked in the forward position and thus act as fixed. All the positions (H5–H8 and V5–V8) above apply equally for flexible nose machine guns.

Flexible nose machine guns can also fire sideways or upwards if flying parallel with the target aircraft, in the same direction. Both aircraft must be in horizontal flight. To resolve these attacks, use **Column B**.



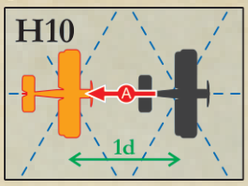
The target aircraft may be directly in front on an adjacent higher altitude level (H5 and V9). If angled in front (H9), it may be on the same level (V5a) or an adjacent higher level (V9), but not at a lower altitude.

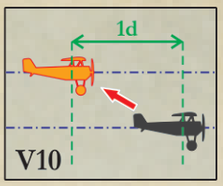


Dorsal MG - Straight Backwards/Upwards

Movement rules do not allow an aircraft to end its movement directly in front of another if they are at the same altitude level, therefore it is not possible to fire from that position.

Dorsal (upper-rear) machine guns can however tilt and fire at planes that are one altitude level above and 1d directly behind (H10/V10). Both aircraft must be flying horizontally and in the same direction.

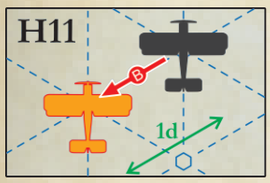


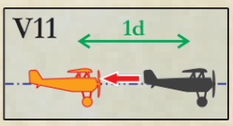


This attack is very effective because it is from the opponent's blind spot. Therefore, to resolve these attacks use **Column A**.

Dorsal MG - Angled Backwards

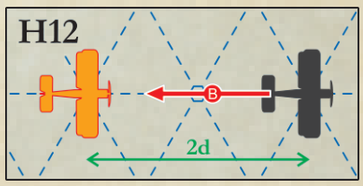
Dorsal machine guns can fire from the position shown in H11, flying parallel, alongside the target at a distance of 1d. The firing aircraft can be either at the same level as the target (V11) or at the adjacent lower level (V10). In both cases, the two aircraft must be flying horizontally. To resolve these attacks, use **Column B**.





Dorsal MG - Far Backwards

Dorsal machine guns can fire offensively backwards at a distance of 2d (H12). In this case, both aircraft must be flying horizontally at the same altitude, directly behind one another. To resolve these attacks, use **Column B**.



Firing Outcome Chart

Firing is always resolved using two red dice, with the two numbers added together. Use either Column A or B, as described for each of the attack positions described above.

ROLLED NUMBERS		A	B	LONG BURST
3%	2	JAMMED	JAMMED	
5.5%	3	MISSED	MISSED	
8%	4	MISSED	MISSED	
11%	5	MISSED	MISSED	
14%	6	DAMAGED	MISSED	
17%	7	DAMAGED	MISSED	
14%	8	DAMAGED	MISSED	
11%	9	DAMAGED	DAMAGED	
8%	10	DESTROYED	DAMAGED	
5.5%	11	DESTROYED	DESTROYED	
3%	12	DESTROYED	DESTROYED	

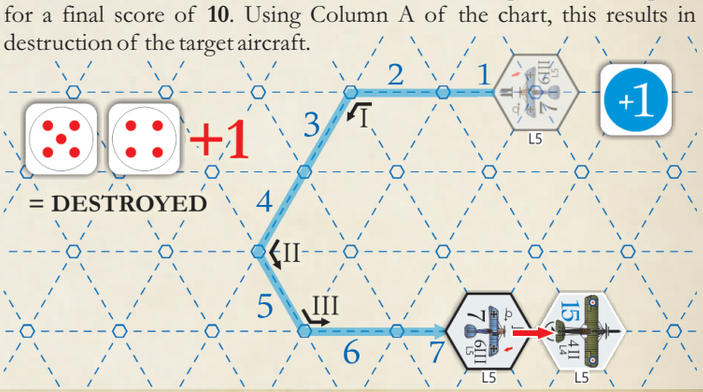
The chart shows the firing outcome from a single machine gun. If the firing aircraft has two coupled machine guns, increase the dice result by one. If it has three coupled machine guns (Fokker E.IV), increase the result by two (2 MG: +1 , 3 MG: +2).

Firing results can be either miss, damage or destruction of the enemy aircraft, or jamming of the attacker's machine gun (which also counts as a miss).

Destroyed

If an attack results in a destruction, the hit aircraft is immediately removed from the board.

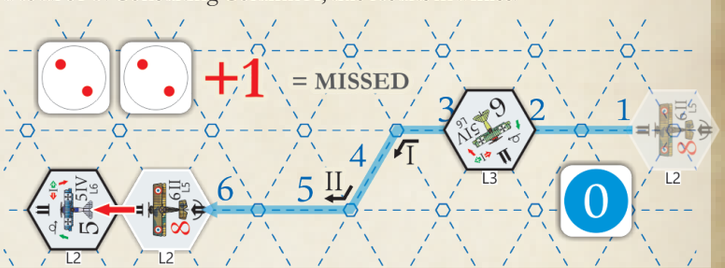
In the example below, both aircraft are at L5 level. The German plane used the maximum number of turns for that type of aircraft (III) and reached the most favorable firing position (strictly from the rear). It scored **5** and **4** on the red dice, for a total of **9**, then added **1** for having two machine guns, for a final score of **10**. Using Column A of the chart, this results in destruction of the target aircraft.



Missed

If the attack results in a miss - the target aircraft suffers no consequences. If the target aircraft has a machine gun from which it can defensively fire back at the attacker, a **break action** can be played (see Defensive Firing on page 9).

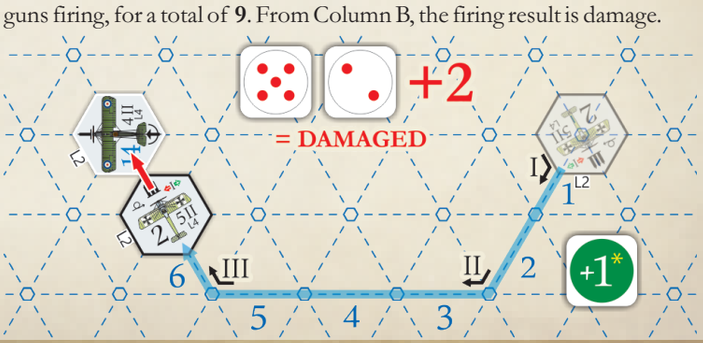
In the example below, a French aircraft fires at a German enemy strictly from the rear. The dice score **2** + **2**, + **1** due to firing two machine guns, for a total of **5**. Consulting Column A, this results in a miss.



Damaged

If the attack results in damage, the targeted aircraft remains in play, but suffers certain restrictions for the remainder of the game. The multicolor die is rolled immediately to determine which part of the aircraft is damaged.

In the example below, a German aircraft moves into position behind the British aircraft and fires. The dice score is **5** + **2**, + **2** for three machine guns firing, for a total of **9**. From Column B, the firing result is damage.



Types of Damage

The four possible types of aircraft damage are described below.

If the blue symbol is rolled on the multicolor die, the **wings** are damaged. A blue damage marker is placed on the aircraft token for the remainder of the game, and its movement speed is reduced by one step to represent damage to its wing structure and aerodynamic efficiency.

If the orange symbol is rolled, the **tail surfaces** are damaged. An orange damage marker is placed on the aircraft token for the remainder of the game, and its maximum number of turns per round is reduced by one.

If the red symbol is rolled, the **machine guns** are damaged. A red damage marker is placed on the aircraft token for the remainder of the game (even if it has no machine guns), and it may no longer fire.

If the green symbol is rolled, the **engine** is damaged. A green damage marker is placed on the aircraft token for the remainder of the game, and its movement speed is reduced by two steps.

Note that engine damage can also occur when the small slider on the Control Panel of a fighter reaches the far-right green square (labeled '*?'). This means that the aircraft can no longer use full throttle without risking damage. If the player wants to take the risk, they can once again roll the green die. If they roll +2, +3, +4 or +5 the engine is still functional, but the slider is removed from the Control Panel, indicating that full throttle cannot be used for the remainder of the game. However, a roll of 0* or +1* means that the engine is overused and thus damaged, so a green damage marker must be placed. As with engine damage from enemy fire, its movement speed is reduced by two steps for the remainder of the game.

In the example above, the French aircraft has already used full throttle three times (maximum), but the player wishes to attempt full throttle once more to escape from danger. The player rolls +1* on the green die, resulting in engine damage. After placing a green damage marker, the aircraft moves **5** (speed) + **1** (die) + **1** (straight flight) - **2** (damaged engine) = **5** steps total.

If an aircraft receives damage a second time, it is immediately destroyed and removed from the board, without needing to roll the multicolor die to determine the damage type.

Machine Gun Jamming

When resolving an attack, if a total of 2 is rolled, the target aircraft suffers no damage but the firing aircraft's guns become **jammed**. The firing aircraft must immediately rotate the large slider on its Control Panel into the horizontal position (see diagram opposite), and move it one position to the right, to show that some ammunition was used in the firing attempt.

A jammed machine gun cannot fire again until the player unjams it on a subsequent round. To **unjam** the gun, the aircraft must complete one game round without changing altitude and making no more than one turn *(the pilot is busy unjamming the machine guns, so cannot perform complex maneuvers)*. If the jammed machine gun is operated by a crew member other than the pilot (dorsal, ventral and flexible nose machine guns, with the exception of the Airco DH.2), the aircraft may perform any maneuver during unjamming.

When the machine gun is unjammed, return the slider to the upright position. It is not permitted to fire during the round in which the machine guns are unjammed.

Long Burst

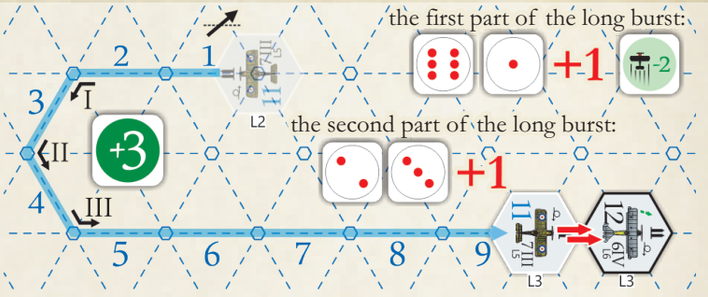
In fighter duels, it is best to fire in short, precise machine gun bursts (around three seconds). However, if a short burst fails to destroy the enemy (i.e. if it was a miss or a damage), the attacking player can choose to continue firing, which constitutes a **long burst**. This is performed by rolling the two red dice a second time and moving the large slider on the Control Panel one more place to the right.

If both dice rolls result in damage, this automatically destroys the target, as with two damages inflicted from separate attacks.

Long bursts may only be used from attack positions where the target is in sight for a long enough period. This is strictly when both aircraft are flying in parallel and in the same direction, as shown in H5, H7, H9, H10, H11, H12, V5a, V5f, V5h, V7a, V9, V10 and V11.

When firing a long burst, the machine gun becomes very hot, making it around 40% more likely to jam during the second roll of the dice. As shown in the right-hand column of the Firing Outcome Chart, a total dice roll of **2**, **4**, **6** or **8** results in a jammed machine gun after the long burst.

Between the first and second roll of the red dice, if the target aircraft has a machine gun from which it can defensively fire back at the attacker, a **break action** can be played. If the result of the break action is damage to the original attacker's machine guns or its destruction, the aircraft that started the attack cannot fire the second part of the long burst.



In the example above, a British fighter comes up behind a German aircraft and fires, resulting in damage to the German's engine. As the German plane has no dorsal machine gun, it cannot return fire (break action), so the British attacker can continue firing with an undisturbed long burst. This also results in damage, so there is no need to re-roll the multicolor die, as the two damage results automatically destroy the German plane.

Defensive Firing

When a target aircraft has a machine gun from which it can fire back at the attacker, this is known as **defensive firing**. To carry out defensive firing, the attacker's turn is interrupted in order to play a break action.

Defensive firing may only be carried out in response to an attack from the other player if that attack resulted in a miss, or in damage to the wing, tail or engine of the defending player. It also requires the defender to have machine gun(s) capable of firing at the attacker.

If the above conditions are met, the defending player rolls the two red dice and consults **Column B** of the Firing Outcome Chart, regardless of position. As with offensive firing, defensive firing can result in a miss, damage or destruction of the attacking plane, or in jamming of the defender's machine gun(s).

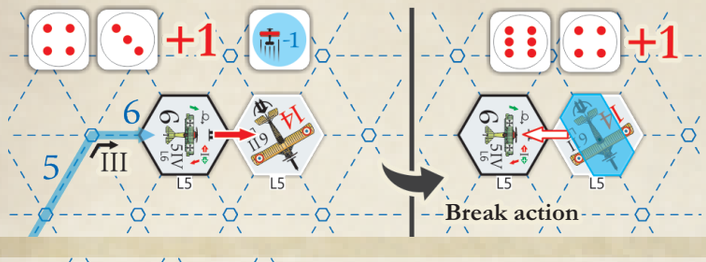
Once the break action is completed, the attacking player then continues their turn, which may result in further opportunities for break actions by defending aircraft.

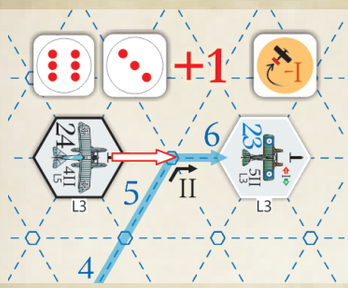
Positions for Defensive Firing

Generally, in any situation when an aircraft is under attack, it can fire back, provided it has machine guns that can fire in that direction (see all 'H' and 'V' diagrams above).

Defensive fire is permitted even if the opponent did not fire offensively for any reason, provided it comes into a position where it could have fired, even if it has no guns that could fire in that direction, as shown in the examples below.

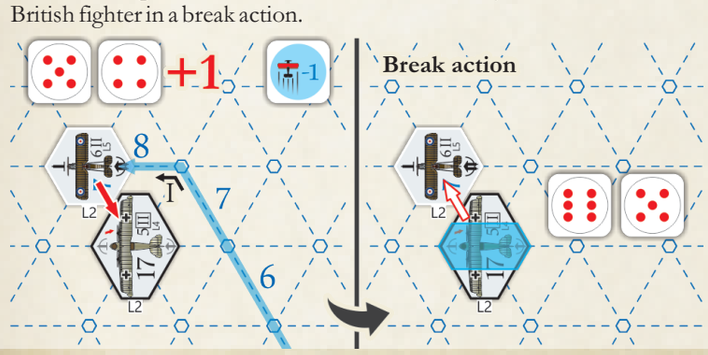
In the example below, a German fighter fires offensively and damages the wings of a French scout. In a break action, the French scout fires (defensive firing) and destroys the opponent.



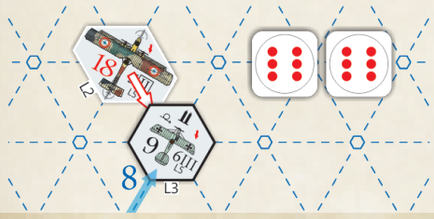


In this example, the British fighter moves in front of the German fighter at a distance of 2d in the last step of its movement, finally pointing in the same direction. The German fighter takes the opportunity and defensively fires in a break action, damaging the opponent's tail.

In the example below, a British fighter fires offensively at a German bomber using its rear machine guns, but the result is only damage to the bomber's wings. The bomber returns fire defensively and shoots down the British fighter in a break action.

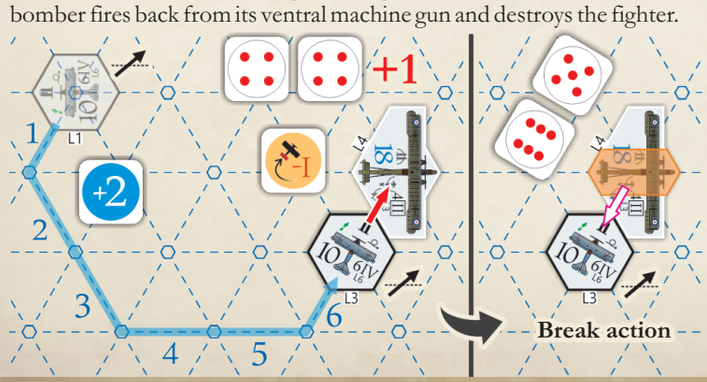


In the example below, a German fighter flying at L3 altitude comes to a point at an angle behind a French bomber flying at L2 level. The bomber takes the opportunity and defensively fires at the fighter in a break action, shooting it down.

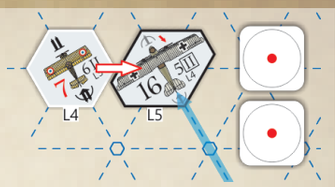


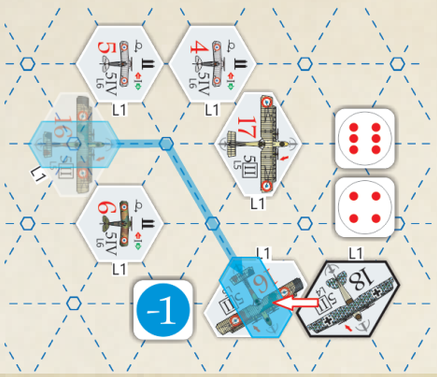
This game does not include any aircraft that can fire at the bomber from the position shown in the example above, because flexible nose machine guns cannot fire downwards. However, this is also considered as a potential offensive position, as the aircraft are flying in parallel in the same direction. Therefore, defensive firing by the bomber is also allowed in this case.

In the example below, a German fighter uses its special ability to climb two altitude levels in one movement, from L1 to L3, and offensively fires at the British bomber at L4, resulting in damage to the tail. In a break action, the bomber fires back from its ventral machine gun and destroys the fighter.



In the example to the right, a German bomber incautiously approaches the French fighter, which then fires its dorsal machine guns in a break action, jamming its own machine guns.



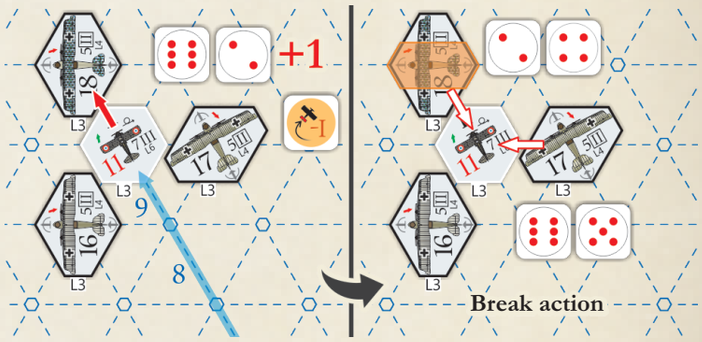


In the example to the left, a French bomber must evade nearby aircraft, which leaves it with no option but to approach the German bomber, which fires defensively and damages the French bomber, which is thus automatically destroyed.

The two examples above show that, even though they are not allowed to fire offensively, bombers can become targets of defensive firing.

An aircraft can become the target of defensive fire from multiple opponents in a single break action. This is most often the case when bombers fly in a tight formation, thus protecting each other from enemy fighters, as shown in the example below.

The example below (left) shows a French fighter approaching three German bombers. It then shoots at bomber number 18, resulting in damage to its tail.



During the break action, bomber 18 fires defensively from its dorsal machine gun, but this results in a miss. In the same break action, bomber 16 cannot fire because it is not flying in the same direction as the French fighter *(in reality, it means they are only at close range for a fraction of a second)*. However, bomber 17 can fire from its flexible nose machine gun, which results in destruction of the French fighter.

Each machine gun (or pair of coupled machine guns) can only fire defensively once during the opponent's turn, even if multiple break actions occur during that time.

The Border Zone

Unlike land or water battlefields, which are often limited by terrain such as coastlines, rivers, hills and forests, aerial battles are fought across an unlimited space. The board for Age of Dogfights is quite large, but still limited. To prevent players from continually moving through the spaces along the edges of the board to reduce the likelihood of being fired at, aircraft may not end their movement in the border zone (see diagram below) on two consecutive rounds.

Aerobatics (optional)

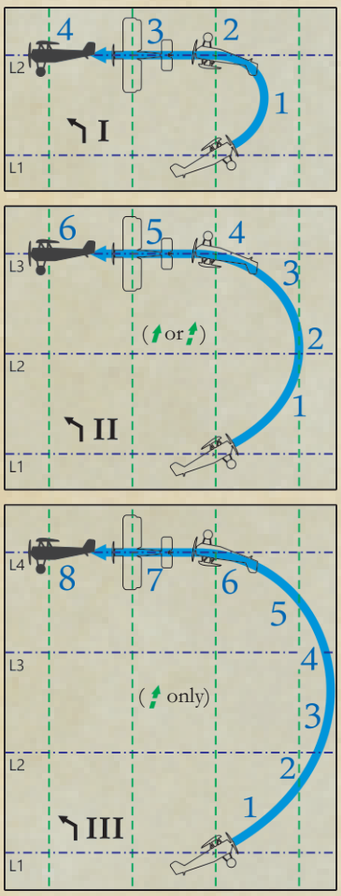
From the earliest days of aviation, pilots tried to amaze onlookers with complex aerial maneuvers. Some of these aerobatic maneuvers could be applied in battle, as the sudden change in altitude and direction allowed pilots to move quickly into an advantageous firing position or evade an attacking opponent. As they add complexity, Age of Dogfights allows the most common of these maneuvers as optional rules.

Only single-seat fighters (except floatplane fighters) may perform these special maneuvers (**aerobatics**). No special maneuvers may be performed by an aircraft with damaged tail or wings.

Each maneuver requires a minimum movement speed, and it must be completed within a single game round.

Each maneuver 'spends' a certain number of direction changes (agility). However, this does not prevent an aircraft from completing the maneuver, even if its agility number is lower than that. It only restricts changing direction in the same round, before or after the aerobatic maneuver.

Immelmann Turn



To perform this maneuver, an aircraft must start its movement in the climb position (in other words, be tilted upwards at the end of the previous round).

The maneuver begins with the aircraft climbing in a half-loop to a point directly above the starting position and facing in the opposite direction, either one, two or three altitude levels above its starting position (point 2 in the top diagram, point 4 in the middle diagram or point 6 in the bottom diagram).

It then rolls back from inverted to upright level flight by moving at least two more steps straight. It can then continue moving in any direction at the new altitude.

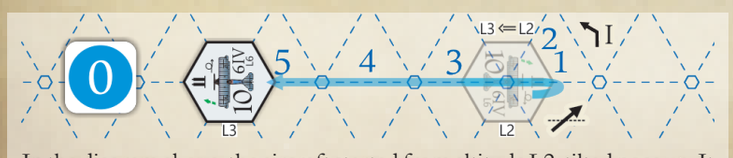
As shown in the diagrams, if climbing one altitude level the aircraft spends two movement steps to reach the point above the starting position. For a fast climbing aircraft that is able to climb two levels, it must spend four movement steps. If climbing three levels, it must spend six movement steps.

As with regular climbing, each increase in altitude level reduces movement by one step for that round. The minimum required number of steps to complete the maneuver is therefore 2, 4 or 6 steps (climb) + 2 steps (roll).

In order to tilt its nose up or down in the last movement step, the aircraft must have at least one more movement step remaining, otherwise it must stay horizontal.

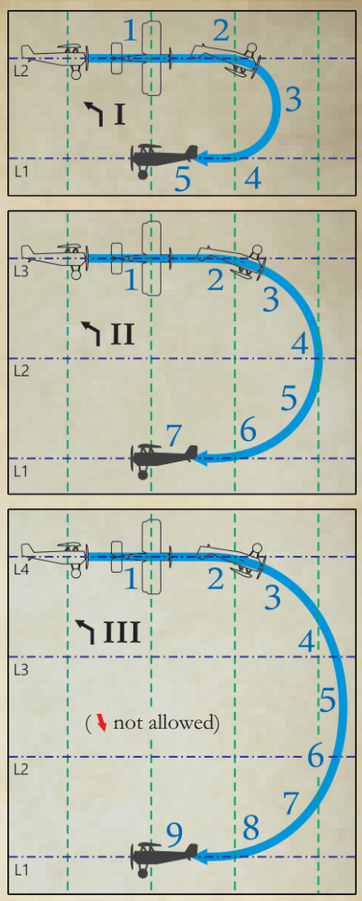
If performing an Immelmann turn by climbing more than one level, the points located 1d in front of the aircraft's initial position on each intermediate altitude level must be unoccupied by other aircraft.

Performing an Immelmann maneuver counts as one, two or three direction changes, according to the number of climbed altitude levels.



In the diagram above, the aircraft started from altitude L2, tilted nose up. It then moved **6** (speed) + **0** (die) - **1** (climb) = **5** steps, finishing on level L3.

Split S



A Split S maneuver is similar to an Immelmann turn, but with the aircraft losing altitude rather than gaining it.

To begin the Split S maneuver, the aircraft must start from level flight, then spend at least two straight movement steps to roll into an inverted position (point 2 on all three diagrams). It then dives in a half-loop to a point directly below this position and facing in the opposite direction, either one, two or three altitude levels below its starting position (point 4/6/8 in the diagrams), then moves at least one more straight step.

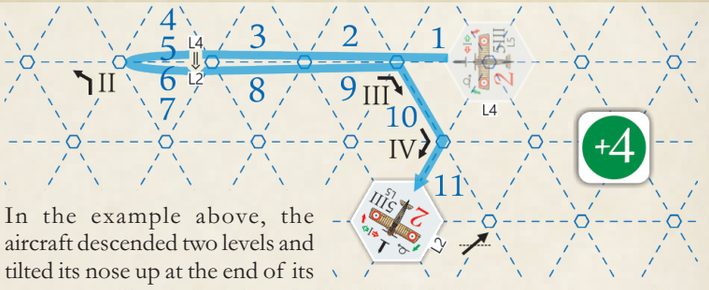
Before or after the maneuver, the aircraft may expend its remaining movement steps in any direction.

The half-loop takes two movement steps if descending one altitude level, four steps for two levels or six steps for three levels. Each descended altitude level also increases speed by one step.

The minimum speed required to perform the Split S is therefore 2 (roll) + 2/4/6 (descent) + 1 (straight). At the end of the maneuver, the aircraft may be tilted in any orientation.

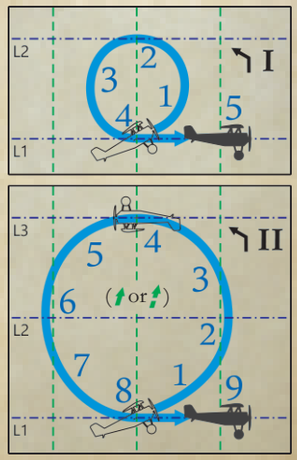
As with an Immelmann turn, all points on the intermediate altitude levels must be unoccupied by other aircraft.

This maneuver counts as one, two or three direction changes, according to the number of descended altitude levels.



In the example above, the aircraft descended two levels and tilted its nose up at the end of its move, travelling **5** (speed) + **2** (die roll) + **2** (descent) = **9** steps. After completing the Split S maneuver, the aircraft turned right twice, the maximum for this situation.

Inside Loop

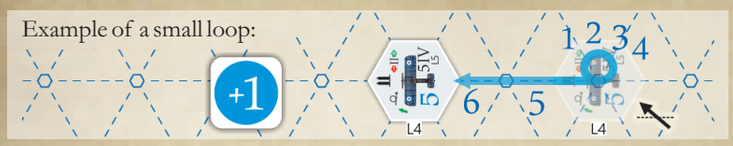


To perform this maneuver, an aircraft must start in the climb position. The aircraft loops by climbing vertically, returning to the initial position and moving at least one more step forwards. At the end of the maneuver, the aircraft may be tilted in any orientation.

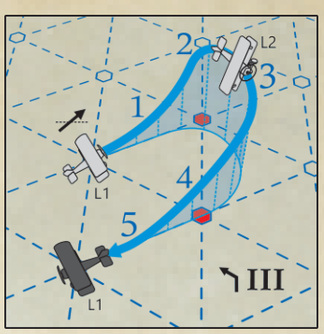
In the case of a **small loop** (top diagram), four movement steps are expended on the loop, and the point one level above the initial position must be unoccupied by other aircraft.

For a **large loop** (bottom diagram), eight steps are spent. The point two levels exactly above, together with all points in front and behind one level above the initial position must be unoccupied by other aircraft.

A small loop counts as one direction change, while a large loop counts as two.



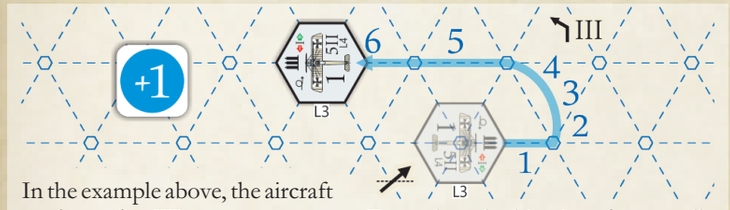
Wingover



To begin the Wingover maneuver, which allows a very sharp turn, the aircraft must start from a nose-up position. It then climbs steeply, turns left or right while pointing vertically upwards and dives back in the opposite direction, finishing at the starting altitude (see diagram opposite). This is performed by moving 1d forwards, turning by 120° and then by 60°, for a total of five movement steps.

After completing the five movement steps of the maneuver, the aircraft may continue moving in a horizontal plane, and at the end of the maneuver may be tilted in any orientation. The maneuver itself (the first five steps) counts as three direction changes.

The two points marked in red in the diagram above must be unoccupied by other aircraft, both on the altitude level the aircraft started from and one level above.



In the example above, the aircraft performed a Wingover maneuver. Even though this aircraft normally cannot turn more than once to the left (agility II with gyroscopic effect), by performing this maneuver it effectively turned by 180°.

Difference in Speeds When Firing (optional)

The standard rule that bombers can never offensively fire at other aircraft avoids the complexity of tracking the relative speeds of each aircraft in each round. If you wish to play a more realistic simulation, however, you can use the optional rule below.

If this rule is applied, the only limit for offensive firing is the difference in current speed between the firing aircraft and its target. Speeds need to be tracked on paper, writing designation numbers of active aircraft and their movement speeds (steps) in each round. The movement speed is the total number of steps an aircraft moves in a round, taking all factors into account (die, altitude change, damage, wind, etc.).

When an aircraft reaches a firing position, the number of steps it just moved is compared to the last movement speed of the target. Depending on whether the firing aircraft is slower or faster than the target, the following speed differences are considered:

Shooter is: / Restriction:	**FASTER** THAN THE TARGET	**SLOWER** THAN THE TARGET
UNAFFECTED	Speed difference: **0-3**	Speed difference: **0-2**
REDUCED HIT PROBABILITY	Speed difference: **4-6**	Speed difference: **3-4**
FIRING NOT PERMITTED	Speed difference: **7+**	Speed difference: **5+**

If the speed difference is in the 'unaffected' range, there are no changes for firing rules. If the difference is too high, it is not possible to fire at all. If the difference is moderate ('reduced hit probability'), the firing outcome is determined by Column B in the Firing Outcome Chart, regardless of firing position.

The same rule applies for defensive firing. If the attacker moves into a position from which it could fire offensively, defensive firing is allowed. If the speed difference is too high for offensive firing then defensive firing is not allowed either.

There is one exception to the above rules: for a frontal firing position from fixed machine guns, the speed difference is not taken into account for either offensive or defensive firing.

Pilot Skill (optional)

Age of Dogfights takes all relevant aircraft characteristics into account, but the outcome of aerial battles are also greatly influenced by the skill of the pilots, particularly in the case of fighters. The game assumes that most fighter pilots are average, but some are either aces or inexperienced rookies. The differences in their skill levels are considered when firing and moving, as described below.

For **average** pilots, firing results are determined as already described.

For **ace** pilots, any sum on the red dice that results in damage to the opponent's aircraft is changed to automatic destruction, representing their greater firing accuracy.

For **rookie** pilots, subtract one from the total red dice result before consulting the Firing Outcome Chart.

The above rules apply only to firing from fixed or flexible nose machine guns fired by the pilot. In two-seaters, another crew member fires from dorsal or ventral machine guns, so these rules are not applied.

When moving, speeds are unaffected, but rookie pilots cannot perform any special maneuvers (aerobatics).

So that both players can see which pilots are aces or rookies, before starting the game place red markers on the numbers of any three fighter aircraft Control Panels to denote aces, and green markers on another three to denote rookies. *This is quite historically accurate, as aces often painted their aircraft with vibrant colors to make them recognizable.*

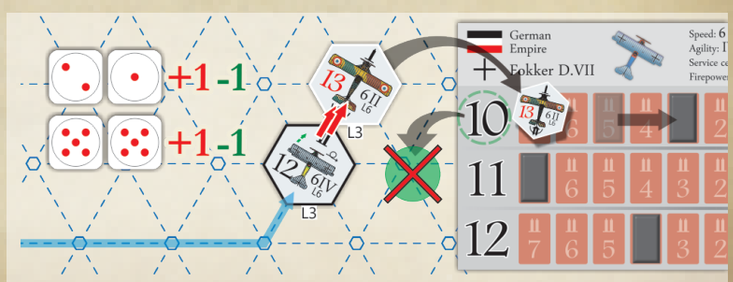
If players prefer to hide their ace/rookie status from their opponent, it is permissible to instead write the ace/rookie aircraft numbers on separate pieces of paper. Only when one of the aces/rookies first reaches a firing opportunity is the player required to reveal the status of that pilot and place the appropriate marker on the Control Panel.

Gaining Experience

The reality of WWI was harsh, with rookies often being shot down in their first battle. The best pilots survived by developing their skills quickly to become aces. In Age of Dogfights, rookies are only required to subtract one from their red dice result until they shoot down their first opponent. As soon as this happens, the green marker is removed from their Control Panel and they are then treated as an average pilot.

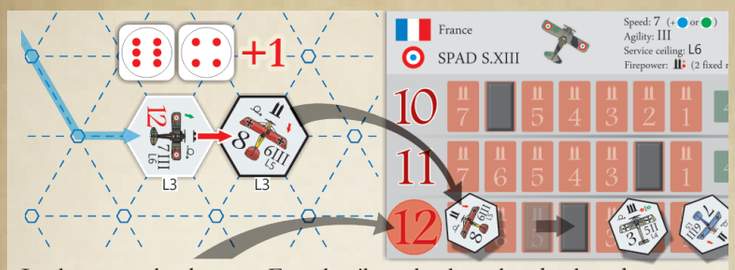
If an average or rookie pilot manages to shoot down three enemy planes, they immediately become an ace. A red marker is placed on the Control Panel and any subsequent damage they inflict during firing automatically destroys their target.

In most countries, the title of 'Ace' was awarded if the pilot managed to shoot down five enemy planes. As the number of bursts available in one game of Age of Dogfights is limited, it is only necessary to shoot down three enemy planes to gain the ace skill.



In the example above, a German rookie uses a long burst (his third offensive firing) and shoots down a French fighter. The aircraft token for

the downed fighter is placed onto the German aircraft's Control Panel to record the total number of kills. The green marker is immediately removed from the number 10 to show that its pilot is no longer a rookie.



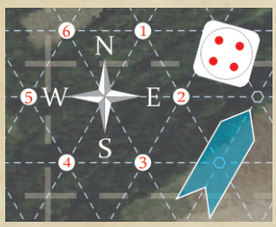
In the example above, a French pilot who has already shot down two German planes manages to take down a third. A red marker is placed on his number (12) on the Control Panel, showing that he has become an ace.

Weather Factors (optional)

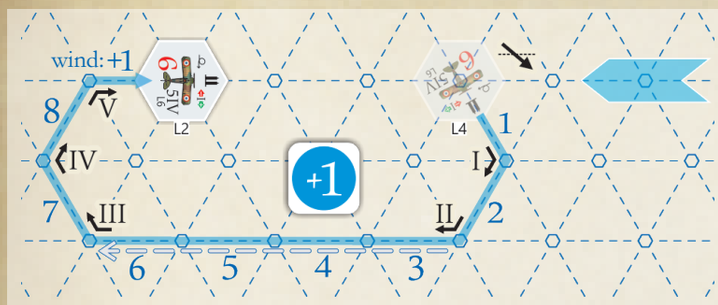
Weather was a significant factor in WWI air combat. Wind significantly affected movement, especially for older, slower aircraft. Also, targets moving in front of the sun can be difficult to see, so an important strategy was to engage the enemy when the sun was behind the attacker whenever possible. Finally, visibility is significantly reduced while in cloud, making it harder to spot targets. In Age of Dogfights, wind, sun and clouds can all affect movement and firing. These rules are optional, as the weather can also be calm and clear, with the sun too high in the sky to disturb aiming.

Wind

To simulate wind, position the wind indicator (blue marker) anywhere along the edge of the board. Wind direction is determined by rolling a red die: if **1** is rolled, the wind is blowing from the northeast, **2** is E, **3** is SE, **4** is SW, **5** is W and **6** is NW. In the example to the right, the wind is blowing from southwest to northeast.



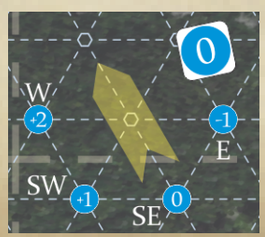
When an aircraft moves, if at least half of its movement steps are strictly downwind, it must move one extra step (in any direction allowed by the normal movement rules). If half or more steps are strictly upwind, the final movement step is taken back.



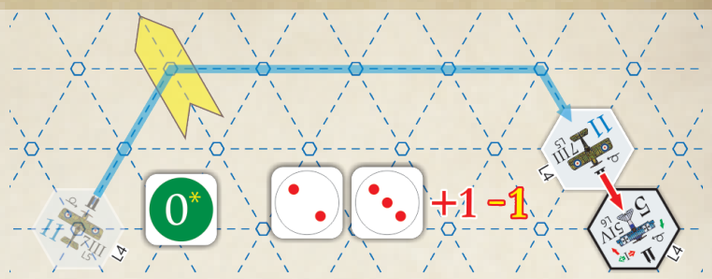
In the example above, the aircraft has a speed of **5**, it got **+1** on the blue die, and because of its descent from L4 to L2 it gets **+2**, for a total of **8**. Of these 8 steps, 4 are made downwind, so it must add a 9th step (in any direction). The total number of downwind steps now becomes less than half (4 out of 9) but the 9th step still stands, as it is not necessary to recalculate after the extra downwind movement (or upwind movement reduction) is applied.

Sun

Before the game starts, position the sun indicator anywhere along the edge of the board. The direction of the sun's rays is determined by rolling the blue die: **-1** means the sun is in the east (shining towards the west), **0** is SE, **+1** is SW, and **+2** is W. The example to the right shows the sun shining towards the northwest (late morning).



If the firing direction is directly facing the sun's rays, subtract one from the total of the red dice roll. *This simulates sunlight dazzling the shooter, which reduces their firing accuracy.*



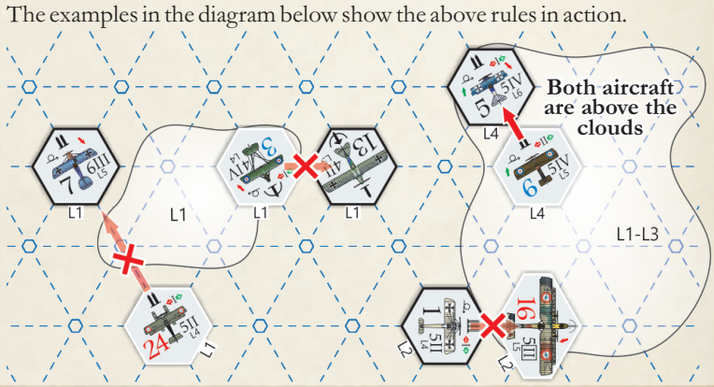
In the example above, the British aircraft came into the most favorable firing position directly behind the German fighter and rolled a total of **5**. This is then increased by **1** as it is firing from two coupled machine guns. According to Column A in the chart, this would be sufficient to damage the enemy aircraft. However, the firing direction is directly towards the sun's rays, so **1** must be subtracted from the total, resulting in a miss (**5**).

Clouds

Firing is never permitted if one of the engaging aircraft is in cloud. If firing from a distance of 2d and the point between the two aircraft is in cloud, firing is also not permitted.

If clouds are being used, they should be arranged on the board in agreed positions before the game starts (either symmetrically or not). Each cloud marker shows its altitude: L1, L1-L2 or L1-L3. Aircraft can move into, out of or through clouds with no penalty.

The examples in the diagram below show the above rules in action.



Game Modes

The whole series of Age of Dogfights games is intended as a simulation of pure aerial battles, with fighters in the main role. For variety, this game also includes aircraft whose primary roles are reconnaissance or bombing, with aerial combat only a secondary consideration.

The limit of no more than six fighters in the Combat Zone applies also to scouts operating in the role of fighters (see below). In modes with specific tasks (Reconnaissance or Bombing), both players can have all their scouts and bombers in the Combat Zone, in addition to their fighters.

Dogfight

Dogfight mode features only fighter planes, together with scouts operating in the role of fighters. The objective of the game is simply to shoot down as many enemy aircraft as possible. The game ends when one player loses (or withdraws) all their aircraft. The winner is normally the player with at least one aircraft remaining in the Combat Zone. Alternatively, players may choose to declare the winner based on the total number of aircraft destroyed and damaged. In this case, every destroyed aircraft is worth one point and every damaged aircraft that manages to withdraw from battle is worth 0.5. Aircraft may only be withdrawn from the Combat Zone if they are damaged or have no remaining ammunition.

As an example, take a game with 12 aircraft on each side that has just ended. The French player has two active fighters in the Combat Zone and the German player has none. Using the standard rules, the first player is the winner. However, of the remaining 10 French planes, six were downed, three were damaged and one was withdrawn because it had used all its ammunition. The German player would then score 6 × 1 point for downed planes, plus 3 × 0.5 for damaged planes, for a total of 7.5 points. Out of the 12 German planes, three were shot down, four were damaged and five left the battle because they had consumed all their ammunition. The French score would therefore be 3 × 1 plus 4 × 0.5 = 5 points. So in this case the German player would have won. If desired, this discrepancy can be resolved by playing a 'bonus' round with the remaining undamaged aircraft, which can be deemed to have returned to their airfields to replenish their fuel and ammunition. In this example, France would use 2 + 1 = 3 planes, and Germany would use 5.

Sample Scenario - **'Intercept the General'**

A French general arrives from headquarters in an unarmed two-seater aircraft (Salmson 2, number 13) to inspect units on the front. The Germans intercept details of the flight and send their fighters to shoot it down.

The board extensions are positioned as shown below. To win, the French aircraft with the General must cross the board and exit on the opposite side of the Combat Zone, to the east. The French player gets six fighters of their choice to defend the General's aircraft. The Germans must try to shoot down the General's aircraft with six fighters of their choice, in which case they win. The French player moves first, and must immediately put the scout into the Combat Zone. It is flying without machine guns or ammunition.

Reconnaissance

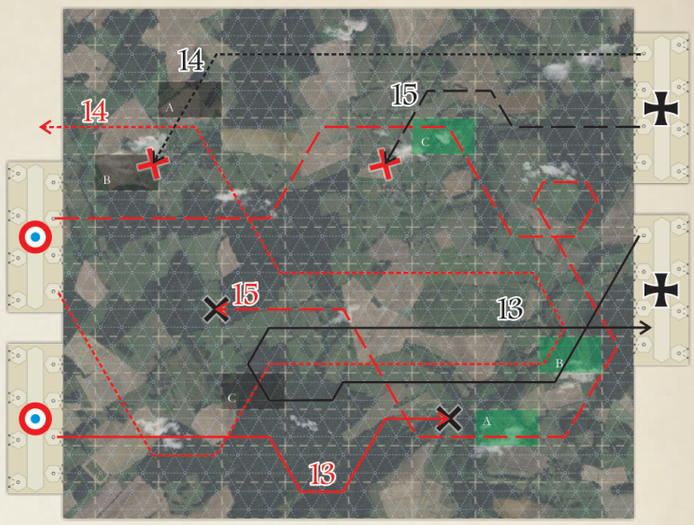
Scouts (and all other aircraft that have slots for photo markers on their Control Panels) have the lead role in this mode. The task is to reach the reconnaissance zone (Task Zone A, B or C) to take photographs and then return them to their airfield (leave the Combat Zone). Fighter planes on the opposing side must shoot down the scouts while protecting their own.

To take sufficient photographs, the scout must fly through at least two points in the Task Zone. They can be photographed from any altitude, unless the players agree otherwise. On leaving the zone, a photo marker with a corresponding letter (A, B, or C) is placed on the scout's Control Panel. In the round when the pictures are taken, the scout must not change altitude, even if the maneuver is performed across two rounds.

The task is considered complete when a scout has left the Combat Zone on the side it started from, at which point the Task Zone marker is removed from the board.

Each photographed reconnaissance zone is worth 3 points. One scout can photograph two zones (the number of negatives in the camera is restricted) and thus score a maximum of 6 points. If different scouts photograph the same zone, no additional points are gained. If a player manages to return photographs of all three zones (A, B and C), they get a bonus of 5 points.

Before starting the game, each player should set up three Task Zones on the opponent's side of the board. These should be in equivalent positions, so both players have the same difficulty level (see example below).



The example above shows the paths of the reconnaissance aircraft. French scout 13 was shot down before it could reach any Task Zone, number 14 successfully took a picture of one zone and left the Combat Zone (3 points) and 15 photographed two zones, but was shot down during its return. Of the German scouts, only number 13 completed the task, as 14 and 15 were both shot down before reaching their Task Zones. This would result in a 3-3 draw. In this case, the tie can be resolved by counting the number of destroyed aircraft (1 point each) and damages inflicted (0.5 point each).

In Reconnaissance mode, scouts are always first in the movement order for each round (from lowest to highest number), with the fighters moving afterwards. *This change in movement order allows fighters to take better positions based on the chosen location of the scouts.*

At least one scout must be brought into play in the first round and there must always be at least one in play, either in the Combat Zone or at the Access Points.

Reconnaissance mode can also be played **asymmetrically**, whereby only one player is tasked with photographing the three zones as above, while the opponent only has fighters. If the scout manages to photograph two or three zones, they are the winner. If less than two zones are photographed, the other player wins.

Sample Scenario - **'Flying High'**

This scenario is played on a board comprising two bifold segments. German aircraft are on the North side and French on the South. Scouting zones and clouds are arranged as shown in the diagram below. Wind and sun can be ignored.

Each side has nine aircraft, comprising three scouts and six fighters of their choice. The task is to photograph each zone from L4 altitude or higher.

Bombing

Bombing mode has two variants: zone bombing and bomber breakthrough. The bombers (and any other aircraft that can carry bombs) take the main role. Scouts and general purpose aircraft can instead choose to operate as fighters. Fighters have the task of destroying opponents and protecting their own aircraft. Both variants can be played with an asymmetric setup.

In Bombing mode, bombers are always first in the movement order for each round (from lowest to highest number), before all other aircraft. At least one aircraft carrying bombs must be brought into play in the first round and there must always be at least one in play.

Zone bombing is very similar to Reconnaissance mode, but in this case bombers must fly through a Task Zone (at least two connected points) and bomb it. While doing so, flight altitude must not be altered. When a zone is bombed, a bomb marker is taken from the Control Panel of the aircraft and placed on the target zone.

Only one bomb can be dropped in a single round. The bomber can drop its second bomb either in another zone or in the same zone again. If bombing the same zone again, the aircraft must make its second pass at the target on a subsequent round.

Each dropped bomb is worth 5 points. Unlike Reconnaissance, it is not necessary for the bomber to return to its side of the board in order to complete the task. If at least one bomb hit each of the three zones, a bonus of 10 points is awarded.

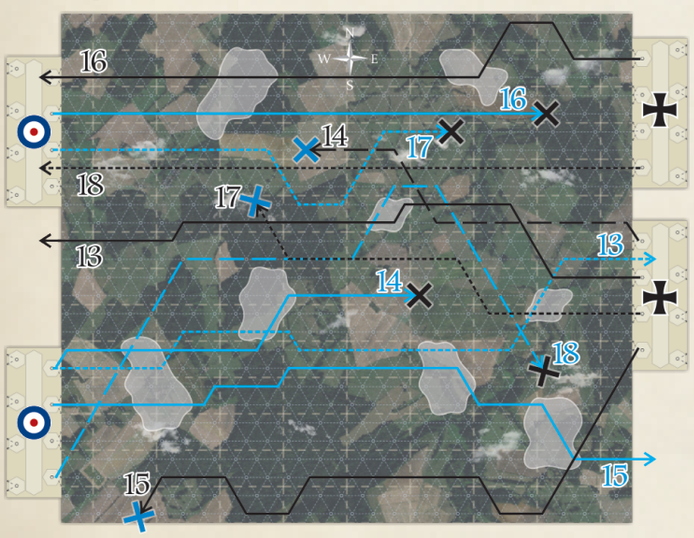
Using the standard scoring criteria, score only points from dropping bombs (5 points each) and shooting down enemy bombers (1 point each). Using the alternative scoring method, also include 1 point for each enemy aircraft downed and 0.5 for each enemy aircraft damaged.

For **bomber breakthrough**, bombers must simply pass through the entire Combat Zone and exit by the opposite side of the board *(in order to carry out strategic bombing somewhere beyond the edges of the board).*

Bombers that succeed in breaking through gain 5 points each and bomb-carrying scouts that do so are awarded 3 points each.

Using the standard scoring criteria, score only points for aircraft that exit on the enemy side. Using the alternative scoring method, also include 1 point for each enemy aircraft downed and 0.5 for each enemy aircraft damaged.

The diagram below shows the flight path of all bombers in the bomber breakthrough variant. All the British bombers were shot down by enemy fighters, and two scouts managed to break through (6 points). On the German side, two bombers and one scout got through without being shot down (13 points).



Sample Scenario - **'Attack at Dawn'**

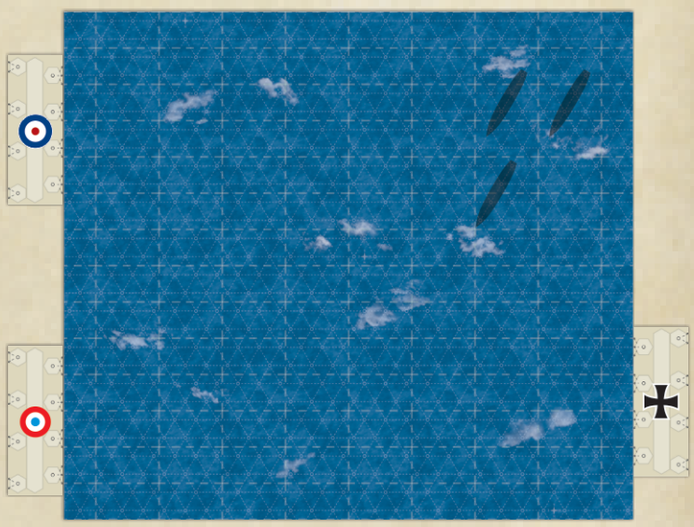
This is an asymmetric setup. German bombers set off early in the morning to break into enemy lines, in a mixed formation with scouts, also armed with bombs. This group is protected by nine fighters of the player's choice. They have taken advantage of good weather without clouds, a favorable wind behind them (blowing from east to west), while the sun is also behind them. The French are ready to confront the Germans with a squadron of 12 fighters. If four or more bombers/scouts manage to break through, the German side wins. If three bombers/scouts break through, the result is a draw. Otherwise the French side is declared the winner.

Torpedo Bombers

Aerial torpedoes are underwater ranged weapons launched from planes and intended for destroying ships and other vessels. In this set, each country has one type of torpedo bomber. They carry one torpedo each that is launched when the aircraft flies at the lowest altitude (L1). It is necessary for the torpedo bomber to fly in a straight line towards the silhouette of the ship for at least the last two movement steps, and the torpedo is launched at the last point. That point must be 3d to 8d away from the silhouette of the ship. The bomb marker is then removed from the Control Panel of the torpedo bomber and placed on the silhouette of the torpedoed ship.

Sample Scenario - **'Convoy Torpedoing'**

Three German fighters and two floatplane fighters fly as protection for a convoy of three cargo ships. From the west, they are attacked by a mixed British-French formation consisting of four torpedo bombers and four floatplane fighters. If the French-British formation manages to torpedo two or three ships, the victory is theirs, if they only torpedo one ship it is a draw, while the German formation wins if there are no torpedoed ships.



Combined Mode

Players may elect to play in combined bombing-reconnaissance mode. Bombers should first bomb the target zones (each bomb worth 5 points). Afterwards, the scouts must photograph the results of the bombing (each successful scout that returns to its airfield is worth 3 points). Destroying and damaging enemy aircraft is also counted as usual (1 / 0.5 points).

Notes

To simplify Age of Dogfights for the first few games, or if playing with younger players, we suggest playing the entire game at one altitude level and without including rules for special characteristics, clouds, wind or sun.

For more experienced players, we suggest an **'Ace vs ace'** variation (especially for Dogfight mode), where all fighter pilots are considered aces. In this case, there is no damage to the aircraft, only machine gun jamming, misses and destroyed aircraft. This reduces the luck factor of dice to a minimum.

Collisions

In real combat, some pilots made deliberate contact with enemy aircraft in an attempt to damage them. Most often, these collisions resulted in the destruction of both aircraft. This is not permitted in Age of Dogfights.

Four Players

Age of Dogfights can be played by four players, operating in two teams of two. For example, one player in a team could control six fighters (two different types) and three scouts, while the other could control six fighters and three bombers. The round sequence can be agreed as desired (clockwise, criss-crossed, etc.)

If played with the main Age of Dogfights Expansion, one player in the Central Powers team could (for example) take the German aircraft and the other take the Austro-Hungarians. In the Entente team, one could take the French forces while the other takes the Italians.

Though not historically accurate, the game can also be played 'everyone against everyone' by either three or four players. In this case we recommend Dogfight mode, with just three fighters per player. The game continues for as long as there are aircraft that can still fight, and players may only withdraw an aircraft when it has no remaining ammunition. The last player left with any active fighters is normally the winner, though it is instead possible to count all destroyed aircraft as worth 1 point. If an already damaged plane is shot down, the player who destroyed it gets the point. Each player also receives 1 point for each of their surviving aircraft, even if it is damaged or left without ammunition.

Aircraft Values

All Control Panels show the aircraft's value in the upper right corner. For scouts and bombers this includes a value for the empty aircraft, plus a total (bracketed) value for when the aircraft is carrying bombs. Each bomb is worth 3 points, so if a bomber carries only one instead of two bombs, it will 'cost' less.

It is not necessary to use aircraft values in the basic game, as all fighters have similar values. However, if players wish to choose asymmetric setups (for example, a different ratio between the number of bombers and fighters), or if playing with expansions that include older aircraft types with poor performance, aircraft values can be used to ensure that both players start with equal strength. Simply agree on a total aircraft value for each player, then allow each to choose aircraft and bombs up to that limit.

Rulebook Contents