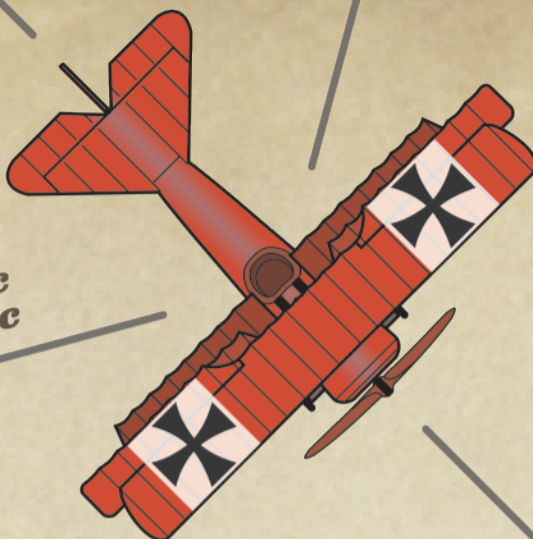


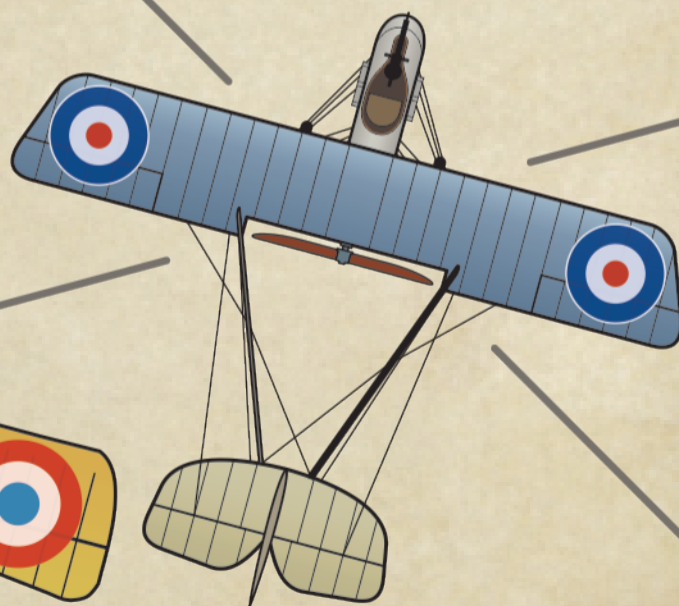
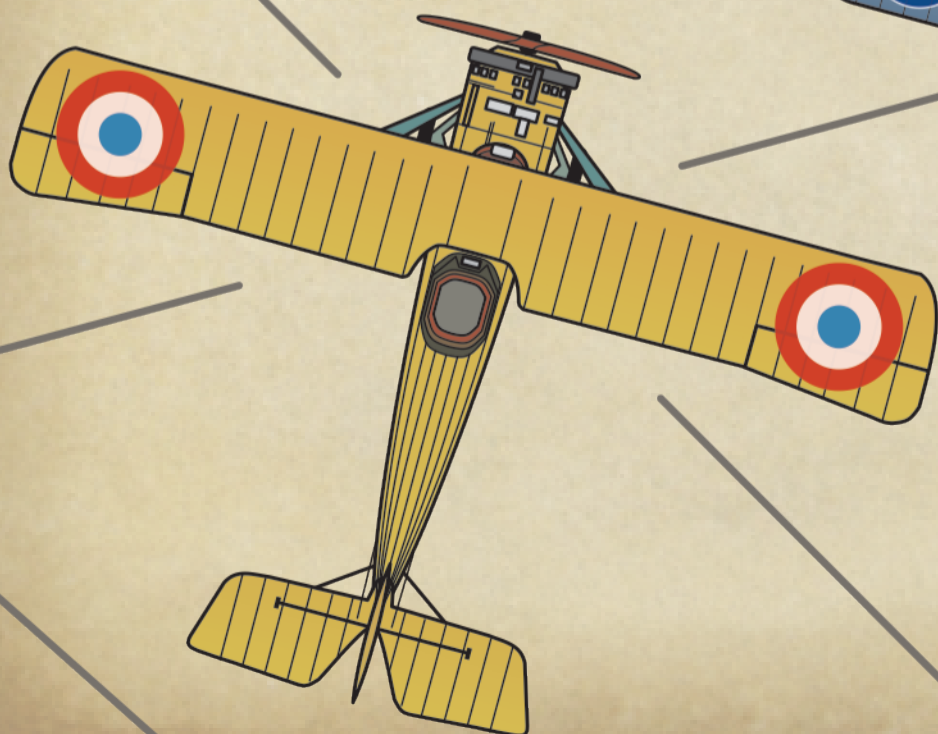


Predrag Lazovic
& Dragan Lazovic



TRIANGLE
SYSTEM

BOARD GAME
**AGE of
DOGFIGHTS: WW1**
RULES AND
INSTRUCTIONS



"MCMD"
(minimum complexity,
maximum diversity)

AGE of DOGFIGHTS: WW1

RULES AND INSTRUCTIONS

In this game, planes from the First World War meet in a battle. Simple rules of movement and firing include all the most important features of the aircraft of the time: speed, agility and firepower. Battles are lead at five different altitudes, so there are differences between the planes in terms of climbing and descending speeds. Some specific characteristics were also taken into account, such as gyroscopic effect, which gives some aircraft exceptional maneuverability. Wind influences movement and the position of the Sun affects firing accuracy, so these factors are also taken into account. A plane under attack can escape into the clouds and thus hide from the enemy. Most of the pilots are average, but there are also rookies and aces...

The last page of this booklet features the rules written in a short manner - summary, which doesn't cover optional rules and the game modes (scenarios). The summary is sufficient enough to play the game, taking into account that logical conclusions would be required for specific situations. It will make it easier to understand the summary if you have already played other of our games using the Triangle system.

However, we recommend reading the whole rules and instructions which include many illustrated examples, so players can apply all the optional rules and different game modes, while the summary can help as a quick reminder of the basic and important rules.

CONTENT

The set includes: 3 bi-fold board segments; 4 board extensions; 54 plastic pieces (aircraft); 100 plastic altitude stands; 3 plastic tilt compensators; 3 initial position markers; 18 control panels; 90 sliders; 24 photo markers; 30 bomb markers; 24 ace/rookie markers; 36 plastic damage markers; 10 plastic cloud markers; 1+1 Sun/wind indicators; 6 plastic task zone markers; 5 d6 dice and a rulebook (this booklet).

BOARD and EXTENSIONS

The board is covered by a grid of equilateral triangles that have small hexes at their vertices (points). The pieces of airplanes move along these hexes. We denote the distance between two adjacent points by "d". The whole Board is a **Combat Zone**.

The board **Extensions** adjoin the board. At the center of each board Extension is the **Patrol Zone**, that contains planes that have not yet entered the Combat Zone. Along the edges, there are 4 **Access Points** where plane pieces are placed just before entering the Combat Zone.



PIECES and STANDS

Germany, France and the United Kingdom had the most powerful aviation during the World War I. In this game, each of the mentioned nations has 12 **fighters**, 3 **scouts** and 3 **bombers**. The chosen types of scouts (reconnaissance aircraft) are single engine two-seaters, which can also perform fighter and bomber tasks beside their main role (reconnaissance).

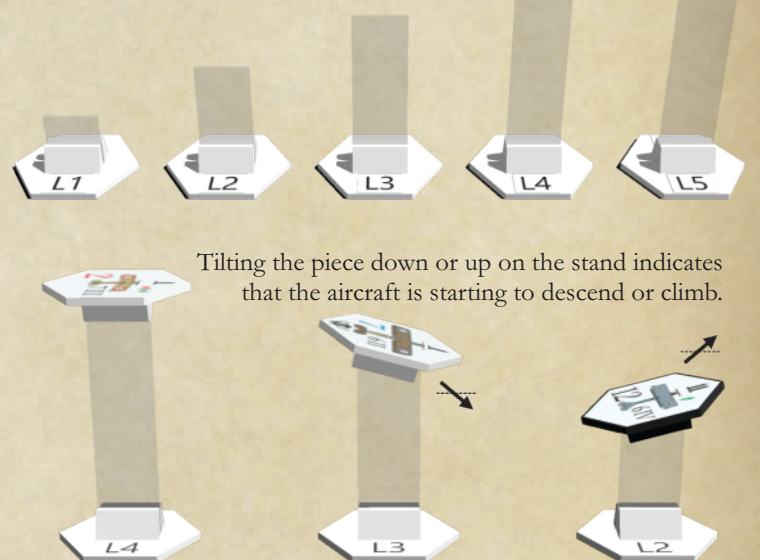
The pieces are made of black plastic (German) and white plastic (French and British), which bear a sticker with the airplane drawing, designation number, as well as its basic and specific characteristics.

The basic characteristics of all types of aircraft are: **armament** - number of fixed and/or ring mounting machine guns (mg), **speed** and **agility**. Only some types of aircraft have specific characteristics, such as: **fast climbing**, **slow descending** and **gyroscopic effect**.

	Aircraft type: Fokker Dr.I	Designation number: 4
	Basic characteristics - armament: 2 fixed mg - speed: 5 (II) - agility: IV	Specific characteristics - fast climbing (↑) - slow descending (↓) - gyro. effect: ↺↻

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

Aircraft pieces are attached to **altitude stands** that exist in five different heights (100 pieces in total). During the game, the plane pieces are put on different stands depending on the height at which the aircraft are flying.



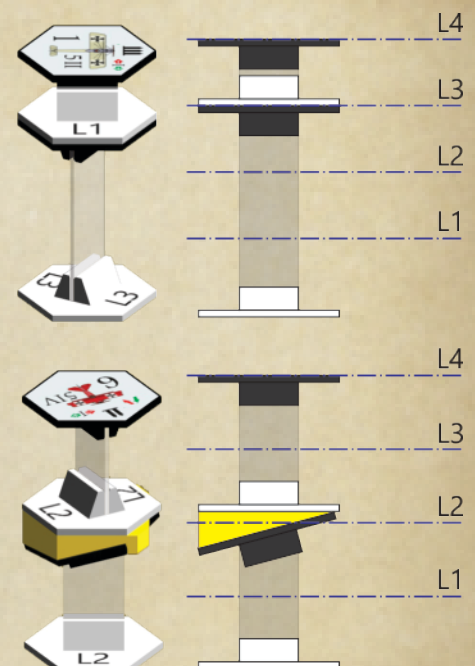
TILT COMPENSATORS (flying over)

During the game, two or more pieces can occupy the same point, but at different heights. In that case, the pieces, together with the stands, are simply stacked over one another, so that the uppermost piece has the suitable stand.

- In the picture to the right, the top plane flies at level 4, but the piece currently has the lowest stand so the overall height is appropriate.

$$(L3 + L1 = L4).$$

- If the lower piece is tilted to one side, use a compensator to allow the upper piece to stand firmly (pictured right).



INITIAL POSITION MARKERS

If a player considers multiple possible paths for an aircraft movement, they can mark the initial position and direction of the aircraft using a marker.



CONTROL PANELS and SLIDERS

There are three aircraft of each type in the game, and all three of them use the same Control Panel. On top of the panel is a drawing of the airplane with all the basic and specific characteristics of that type of aircraft. The rest of the panel shows the designation numbers of each individual aircraft and slots for various Sliders and markers.

All Control Panels have series of red rectangles with symbols of machine guns 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 - there are several series of red rectangles on the Control Panel.

Fighter aircraft also have series of green squares on their Control Panels. The number on the far left green square indicates how many times that aircraft can use full engine throttle.

At the beginning of the game, Sliders of the matching color are placed on all the far left rectangles of each red and green series of rectangles. Each time the plane fires, the red Slider on the panel is moved one slot to the right. When the last burst is fired - the red Slider is removed from the Control Panel. Each time a plane flies with full throttle, the green Slider is moved one slot to the right.

The following picture shows that the aircraft no. 7 fired twice from the front and rear machine guns and used full throttle three times. The plane no. 8 fired three times from the rear machine guns (all rear ammo is spent) and used full throttle once. The plane no. 9 neither fired nor used full engine throttle.





	France		Speed: 6 (● ● ● ● ● ●)	Agility: II	Firepower:   (2 fixed + 2 dorsal mg)	1918							
7									3	2	1	*?	
8									3		1	*?	
9										2	1		*?

PHOTO and BOMB MARKERS

Bombers' control panels have slots for Bomb markers, while scouts have both Bomb and Photo markers.

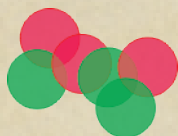
When a scout takes a photo of a Task Zone (A, B or C), a corresponding **Photo marker** is placed on its Control Panel.

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









































ACE / ROOKIE MARKERS

Each player has 6 red and 6 green round markers. **Red** circles mark fighter planes with exceptionally good pilots - aces. **Green** circles mark fighter planes with inexperienced pilots - rookies.



The following picture shows a Control Panel at the beginning of game: no. 4 - average pilot; no. 5 - rookie; no. 6 - ace.

 United Kingdom  Sopwith Camel		Speed: 5 (●●●●●)  - Gyroscopic effect: all	Agility: IV	Firepower:  (2 fixed mg)	1917						
4		 6	 5	 4	 3	 2	 1		 2	 1	
5		 6	 5	 4	 3	 2	 1		 2	 1	
6		 6	 5	 4	 3	 2	 1		 2	 1	

DAMAGE MARKERS

Many aircraft are damaged during combat. The pieces of damaged aircraft are marked with plastic Damage markers in different colors depending on the type of damage.



CLOUD MARKERS and SUN/WIND INCITATORS

The Cloud markers represent thick clouds where aircraft can temporarily hide from enemy fire.

The Sun and Wind indicators are used to determine the direction of the Sun's rays or wind.



TASK ZONE MARKERS

Task Zone markers are transparent plastic rectangles (3 black and 3 green) which are placed on the board (between white dashed lines), by agreed or given positions. They mark the zones which should be bombed or photographed.



DICE

The **blue** die has the following numbers: **-1, 0, 0, +1, +1** and **+2**, while the **green** has: **0*, +1*, +2, +3, +4** and **+5**. These dice are used when moving aircraft pieces.

Two **red** dice (white with red dots) are classic d6 with numbers from 1 to 6. They are used when firing a machine gun.

The **multicolor** die is used in determining the damage to the aircraft. It has two blue, two orange, one red and one green side.



GENERAL RULES

The game is for 2 players, who play alternately. In each turn, players move their pieces and fire if given the opportunity.

There are three basic game modes (with variations): **Dogfight**, **Reconnaissance** and **Bombarding**. In general, Dogfight mode involves fighter planes (pieces with numbers 1 to 12), in Reconnaissance mode scout planes join (numbers 13 to 15), and in Bombarding mode, bombers (16 to 18) join the fighters.

All fights take place in the Combat Zone (the board), and before entering it, the pieces are put in Patrol Zones. Only if **damaged** or if they have **used up all the ammunition**, fighters may leave the Combat Zone.

Once an aircraft leaves the Combat Zone, it cannot re-enter.

There may be a maximum of 6 fighter planes per player in the Combat Zone (players can agree on different number).

If a player has no aircraft in the Combat Zone, they must bring in at least one plane from the Patrol Zone (if there are any) in the next turn.

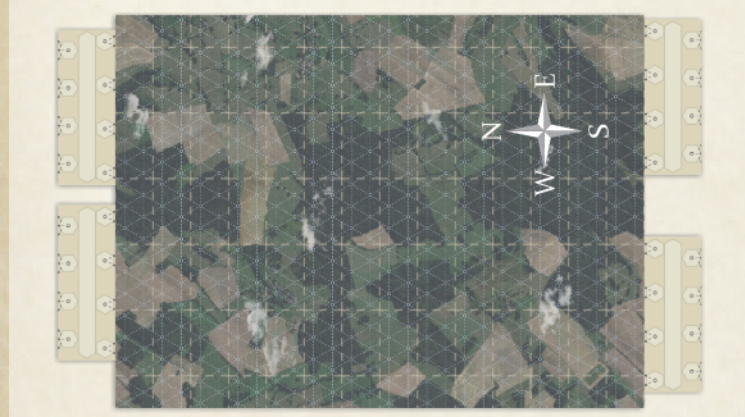
GAME SETUP

The complete board consists of 3 bi-fold segments, but if players want to play a short game with small number of aircraft – the board can be assembled of only two segments.

Each player has their own side of the board, which is opposite the opponent's. That can be along the longer or shorter side (east-west or north-south). Each player puts on two board Extensions along their side, making sure that the lines coincide with the lines on the main board, see examples in the pictures:



The following picture shows a "shortened" board where players chose northern and southern side.



One player has German planes and the other chooses French and/or British planes. The number of pieces is a matter of agreement between the players.

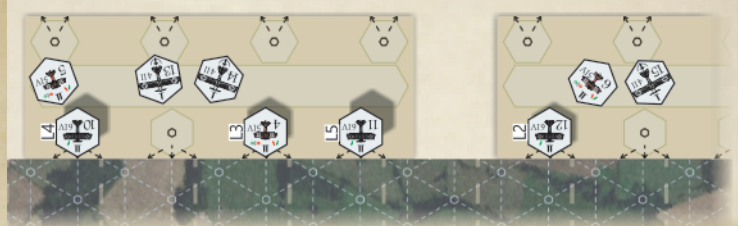
Example: The Dogfight mode is being played and it is agreed that each player has 9 planes. One selects German aircraft, namely fighters **Fokker Dr.I** (numbers 4, 5 and 6) and **Fokker D.VII** (10, 11 and 12) and scouts **Aviatik DFW C.V** (13, 14 and 15). The other player combines French and British 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 it is the only German aircraft to have a machine gun that shoots backwards, and its flying stats are good enough to engage in battles with fighters.

Four of the chosen aircraft pieces are attached on stands (the players choose which altitude) and placed at the Access Points. The remaining pieces (not attached to stands) are placed in the Patrol Zones.

Players use Control Panels that match the chosen planes and place Sliders on their starting positions.

After the setup are complete, the game starts. The first player rolls a blue (or green) die and moves the plane from one of the Access Points that has the smallest designation number. Then they roll the blue or the green die again and move the next plane, and so on ... When they finish with getting all the planes from Access Points into the game, the other player starts moving their pieces...

The following figure is an example of correctly positioned pieces on Access Points. They are all on stands of different altitudes (L2 to L5).



A TURN

All the planes that are in the Combat Zone must be moved, and all the pieces on Access Points must be brought into the Combat Zone by moving them, starting with the piece with the smallest number.

After that (if they want) players can move another one or two pieces from the Patrol Zone to the Access Points.

After moving each piece, if it is in a position to shoot at an opponent's piece, the shooting procedure is immediately performed.

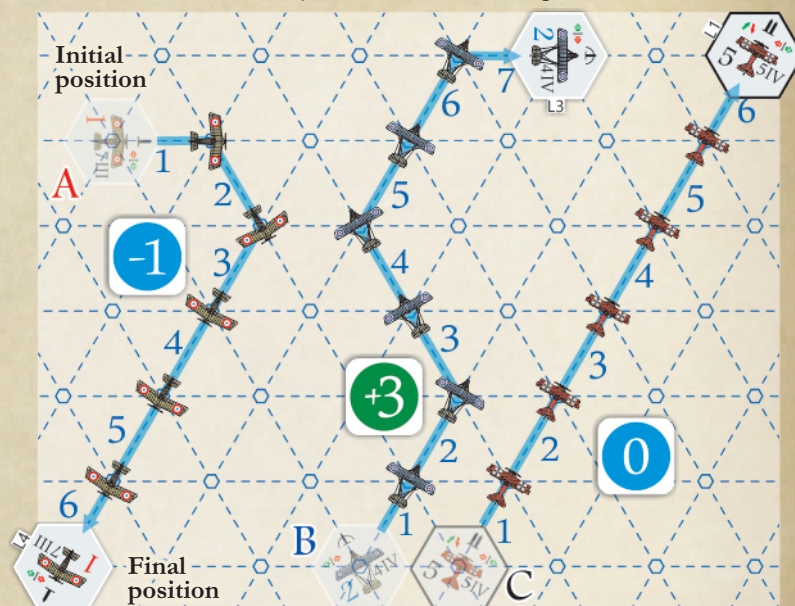
AIRCRAFT MOVEMENT

During real air combat, aircraft perform complex maneuvers both horizontally and vertically. In this game, the fights are conducted in five different **horizontal levels** (from L1 to L5), and the pieces can move from one level to another (climbing or descending) multiple times.

Before moving each piece, a blue die is rolled. If a fighter plane is moved, the player can choose whether to roll a blue or a green die. The blue die represents the usual range of speeds of an airplane. The green die has larger numbers and is used when a player wants to move an airplane as fast as possible. Then they use full throttle, however, the use of this die is limited during the game (it is indicated by the number on the far left green square on the Control Panel).

MOVEMENT IN A HORIZONTAL PLANE

A piece always moves to a neighboring point just ahead or to a point that is left or right (at 60°). Any such transition from point to point is called a **step**. The number of steps a piece makes in one turn depends on the **speed** of the aircraft (the number printed in the Arabic digit on each piece and its Control Panel) and the number obtained on the blue or green die: the number on the die is added to the "speed" number. When moving a piece, player must take care to orient it properly at each point. In the case that the piece moves exclusively straight forward throughout the turn, the sum should be increased by 1. Here are some examples:



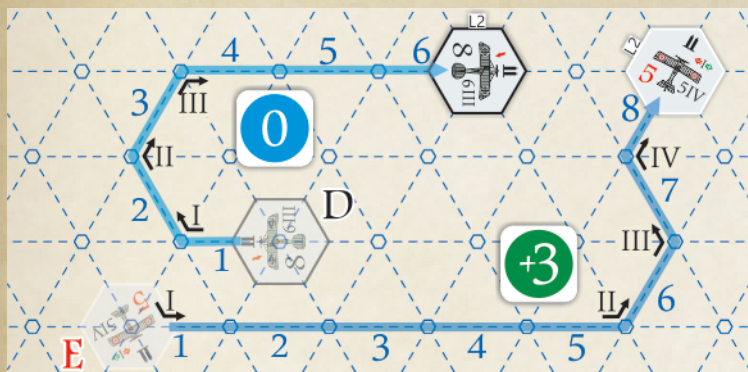
In the picture above, all aircraft are moving in horizontal planes, but at different altitudes. The number of steps for each aircraft is:

- 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

Airplanes cannot pass through the points at which other pieces are - if they fly at the same altitude. Also, the end point of movement can never be directly in front of another piece - if an aircraft is flying horizontally, other pieces cannot end their movement at the point in front of it at the same altitude level. If a piece is tilted (announced climbing / descending), other pieces cannot end their movement at the point in front of it on a higher / lower altitude level.

DIRECTION CHANGING (AGILITY)

During movement, the number of times an airplane can change direction in one move is limited. *In the previous example, aircraft A changed direction (moved 60° right) twice, aircraft B turned right in the first step, later it had both right and left turns, a total of four, while aircraft C had no turns. Agility* is a basic feature of an airplane (indicated by a Roman number on the piece) that shows how many times an airplane can change direction in one turn.



In the example above, the airplane **D** turned three times (the maximum for that type of aircraft) to the right. The airplane **E** has turned left already in the first step, then turned left two more times and once to the right, a total of four times (maximum for that type of aircraft).

GYROSCOPIC EFFECT

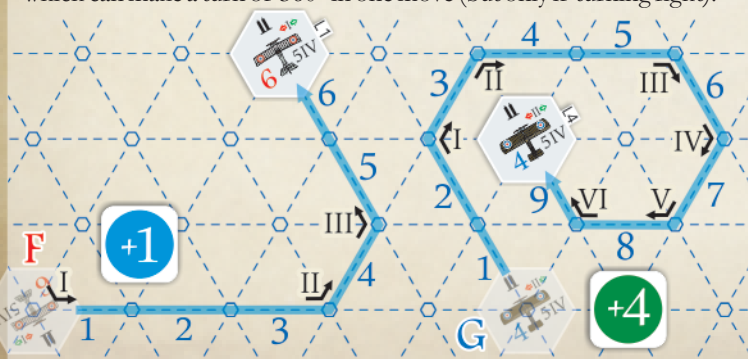
During this period of aviation development, rotary engines were highly present. In these, the cylinders rotate with the propeller and, as a consequence of the gyroscopic effect (several factors), the aircraft has difficulties when turning to the left. In this game, airplanes with rotary engines have the specific feature of **gyroscopic effect** (↔↔) - better turning to the right: they can make one turn more if turning exclusively to the right, but they can also make one turn less if turning solely to the left.

Sopwith Camel is the aircraft that stands out from this group of airplanes, because its gyroscopic effect is particularly pronounced due to its massive parts (engine, tank and armaments) being in the first third of its total length. Therefore, the maximum number of turns increases/decreases by two (↔↔↔↔).

An exception are aircraft with the propeller positioned behind the engine (pusher configuration), which have the opposite effect - better turning to the left (↔↔↔↔). **Airco DH.2** is such an aircraft.

If a rotary engine aircraft turns left and right during a single movement, the gyro effect is ignored.

In the following example, the aircraft **F** has a rotary engine. It combined forward steps and left turns so it could make a total of IV - I = III turns. Airplane **G** (Camel) had all turns to the right and made a total of IV + II = VI turns. Sopwith Camel is the only type of aircraft which can make a turn of 360° in one move (but only if turning right).



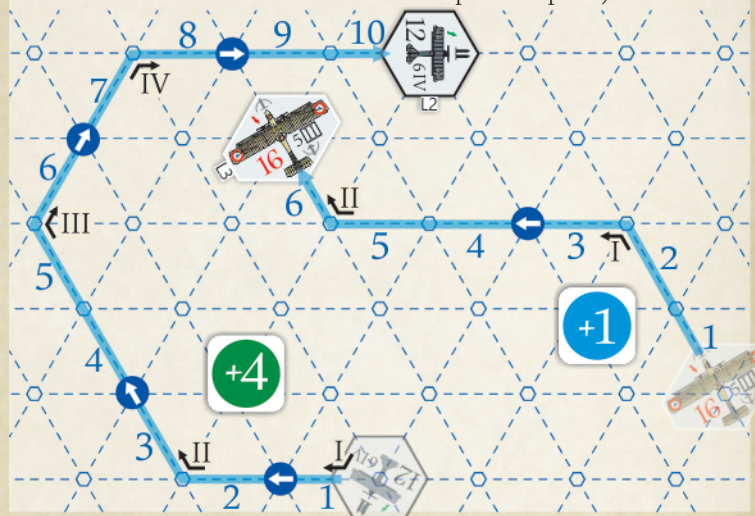
TURNING RADIUS

According to the laws of physics, the higher the speed of movement of the aircraft, the higher the turning radius. Therefore, when an airplane has **10 or more steps** in one turn - it cannot make turns in successive steps.

Multi-engine bombers, because of their size and sluggishness, cannot make consecutive turns regardless of the total number of steps in a move. Therefore, on the bomber pieces, the Roman number (indicating the maximum number of changes of direction in one move) is written within a square (□).

In the example in the picture, the fighter had a turn already in the first step and three more times later, but there was at least one step straight ahead between turns. It made 4 turns in total, which is the maximum for this type of aircraft. The bomber changed direction a maximum of two times, but not in successive steps.

(Symbols → mark the points on the route where the plane was not allowed to turn because it had turned at the previous point)



CHANGING FLIGHT ALTITUDE

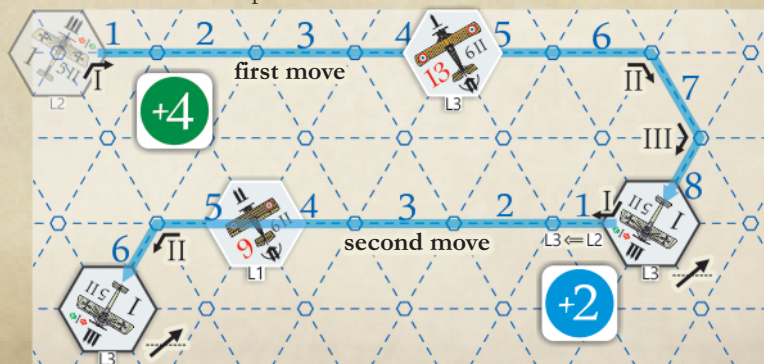
In this game, planes move at 5 different altitude levels. In order for a plane to change the altitude at which it flies, it is necessary for the player first to tilt its nose up (↗) or down (↘) at the last point of a movement. It is only in the next move that the piece changes the altitude at which it flies. Each change in altitude requires a change of the stand which holds the piece.

Once tilted, a piece must change altitude in the next turn.

CLIMBING

If at the end of the movement in the previous turn the piece is tilted to the "announced climb" position (↗) - in the next move, the piece is removed from the previously used stand and placed on a higher one (for example, from stand L3 to stand L4). In this way, the piece changed the altitude at which it was flying. After that first step, changing the stand, the piece continues to move in a horizontal plane in the manner described earlier. When climbing to a higher altitude, the planes lose some speed, so the total number of steps the piece takes is reduced by 1 in this turn (change of altitude: +1 ⇒ speed: -1).

At the last point of that movement, the player can either leave the piece horizontally or tilt it again into the "announced climb" or "announced descent" position.



In the previous picture, the aircraft was flying at L2 level in the **first move**. It went: **5** (speed) **+3** (die) = **8** steps. At the last point of this movement, the airplane tilts its nose upwards (↗ - "announced climb"). In the **second move**, the piece changes the altitude stand in the first step - from L2 to L3. It went: **5** (speed) **+2** (die) **-1** (climb) = **6** steps. At the last point of that second movement, the player tilted the piece up again, intending to climb it to L4 level afterward.

In the first move, the piece went underneath a French aircraft with number 13 which is at L3 level. In the second move, the piece went over the French plane with number 9 (level L1).

FAST CLIMBING

In one move, an aircraft can climb one level above the "announced climb" position. An exception are the aircraft that have the specific feature of **fast climbing** (↗). These planes can change two levels in one go. They climb to the first adjacent altitude level in the first step, and to the next adjacent level in the third step. The total number of steps in this move is reduced by 2 (change of altitude: +2 ⇒ speed: -2).

The following example shows how a Fokker D. VII aircraft transitions from level L1 to level L3. At the end point of the turn, the player tilted the plane with its nose down (placed it in the "announced descent" position). During the movement, Fokker D.VII passed above the British, and below the French aircraft. Movement steps: **6** (speed) **+1** (die) **-2** (climb) = **5** steps.

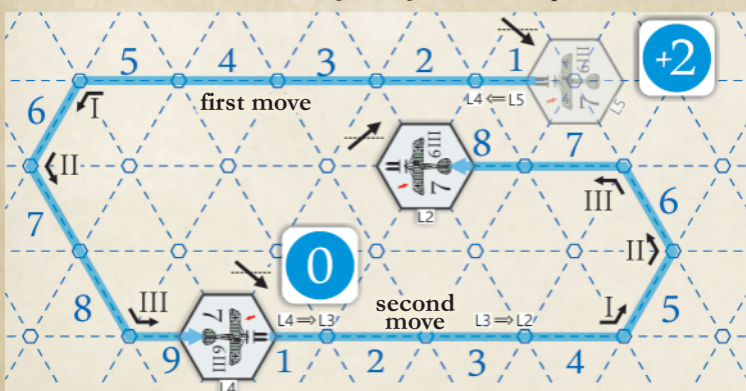


DESCENDING

If a piece was tilted nose down ("announced descent" ↘) in the previous move - it can descend for 1, 2 or 3 altitude levels (the stand is changed to a lower one). The change of one altitude level occurs in the first step; two levels: 1st and 3rd; while altitude changes in a three-level descent occur in the 1st, 3rd and 5th step of movement.

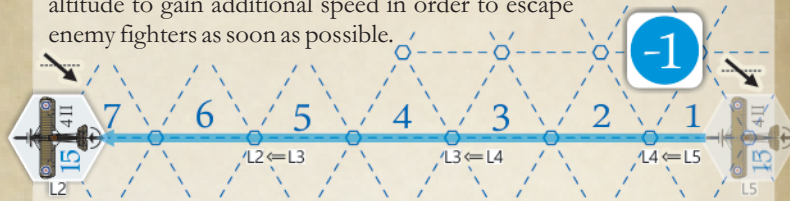
When descending to a lower altitude, airplanes gain speed, so the total number of steps a piece takes in this move is increased by 1, 2 or 3 (+1 for each descended level).

At the last point of this movement, the player can either leave the piece horizontally or tilt it again to the "announced descent" or "announced climb" position. **Exception:** If an aircraft descends 3 altitude levels at once, the piece cannot be tilted up at the end of the same move. *This maneuver (climbing immediately after a steep descent) would put an extreme strain on the construction of aircraft as well as on pilots.*



In this example, the aircraft was already tilted nose down (↘) at the beginning of the first turn. During this turn, it descended from level L5 to level L4. It went: **6** (speed) **+2** (die) **+1** (descent) = **9** steps. The stand was replaced in the first step. At the last point of this movement, the piece again tilts the nose downwards (↘). In the second turn, the piece changes the altitude level from L4 to L3 in the first step. As the movement continues, the plane descends one more level (from L3 to L2). The aircraft made: **6** (speed) **+0** (die) **+2** (descent) = **8** steps. At the last point of that second turn, the player tilted the piece up, as they intended to climb it to L3 level afterwards.

In the following example, the aircraft descended from level L5 to L2, flying in a straight line. It went: **4** (speed) **-1** (die) **+1** (straight movement) **+3** (descent) = **7** steps. In this example, the scout, which has already completed the task, uses the advantage of flying at high altitude to gain additional speed in order to escape enemy fighters as soon as possible.



SLOW DESCENDING

Due to a poor construction or production of some types of aircraft, the wings sometimes broke during steep descent. That is why this maneuver was banned for these planes. In this game, some types of aircraft have the specific characteristic of **slow descending** (↘) - they may descend maximum 2 levels in a single movement. All multi-engine bombers have this characteristic (due to their heavy weight).

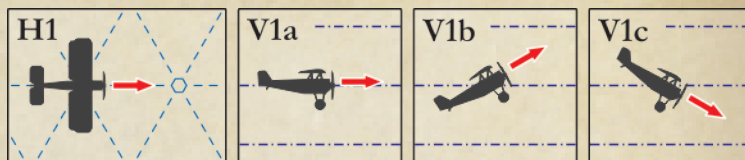
ARMAMENT - SHOOTING

In the initial period of the First World War, aircraft were used mainly for reconnaissance and correction of artillery fire so they were not even armed. During the encounters, pilots often fired at the enemy from a handgun or rifle. Soon, movable machine guns were mounted on planes, from which the second crew member fired. All this was not particularly efficient, because when firing, the shooter had to take care not to hit parts of their own aircraft: propeller, wings, tail ... Only with the introduction of synchronized fixed machine guns that fire through the propeller the fighters planes became efficient. Some aircraft have retained movable machine guns, but they mostly served for defense.

MACHINE GUN POSITIONS AND SHOOTING DIRECTIONS

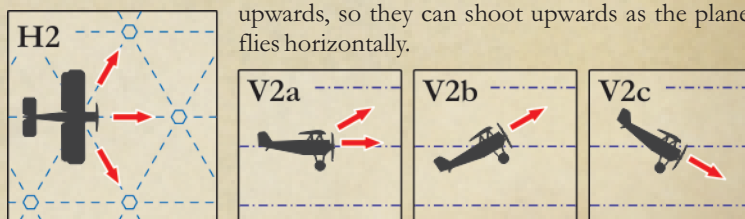
Fixed machine guns are the main weapon of fighters and scouts. They are located in the front of the plane. For some types, they are mounted on the upper wing and shoot above the propeller, and for some they are mounted on the fuselage and shoot through the propeller. Near the end of the war, almost all fighters had two, and only some older types had one fixed machine gun. The only exception is Fokker E.IV, which has as many as three fixed machine guns.

Fixed machine guns shoot straight ahead on 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.*

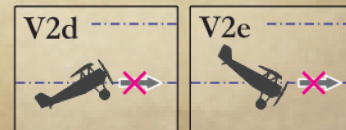


Flexible nose machine guns (one or two) were mounted on bombers, but also on some scouts and fighters. They were mainly used to defend against enemy aircraft attacks. In this kit, the only fighter with such a machine gun is the British Aircro DH.2.

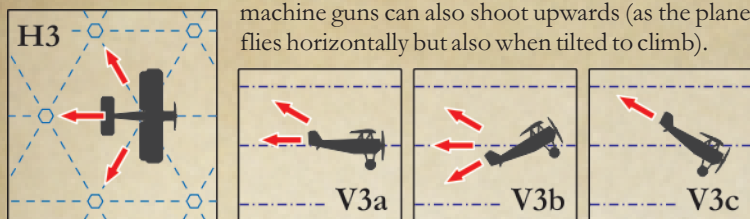
These machine guns, according to the rules of this game, shoot in all three forward directions. Since they are movable, they can tilt upwards, so they can shoot upwards as the plane flies horizontally.



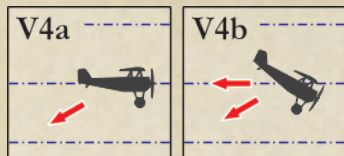
When the piece is in the positions such as in V2d and V2e schemes, it is not possible to shoot in crossed (X) directions.



Dorsal machine guns (1 or 2) are mounted on all scouts and bombers, but also on some fighters (two-seaters) - Hanriot HD.3 and Bristol F.2. They are controlled by another crew member. They are on flexible mounts so they can shoot in three backward directions. These machine guns can also shoot upwards (as the plane flies horizontally but also when tilted to climb).



Ventral machine guns are only present on some large bombers. In this kit, it's the Handley Page O/400. They serve solely for self-defense. Like dorsal, these machine guns can shoot in three backward directions (see H3) but only downwards.



OFFENSIVE SHOOTING

In real air combat, planes constantly fly in intertwined routes, firing at each other as soon as the opportunity arises. In this game, this continuous movement is divided into quanta - playing turns. One turn occupies a short period of time (about ten seconds). When one player successively moves all of their pieces - then another player does the same and they alternate until the end of the game. When an airplane attacks an opponent during their turn - it's an **offensive shooting**.

Applying the rules for moving and firing, an airplane of any class (fighter, scout, bomber) could be in the position to fire offensively. However, in real battles, along with fighters, only scouts have flying characteristics such that they can fire offensively (the machine gun symbols on the pieces and control panels are in black).

In order for an aircraft to fire offensively - at the last point of its movement path, this piece must come to the **firing position**. The firing procedure is the following: two red dice are rolled, the numbers obtained are added up and the chart (column A or B) is consulted. Column A gives the better chance to take down the target plane. The chart and the results of the shooting will be explained in one of the following chapters.

It is possible that multiple aircraft shoot during one turn. When a plane reaches a firing position, the firing procedure is immediately done (unless the player doesn't want to shoot). After that, the rest of the pieces are moved and the process is repeated.

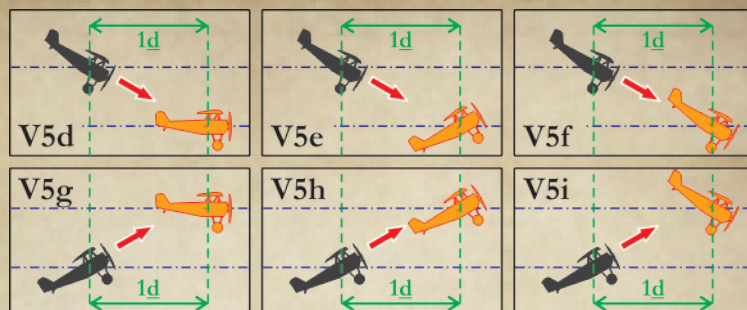
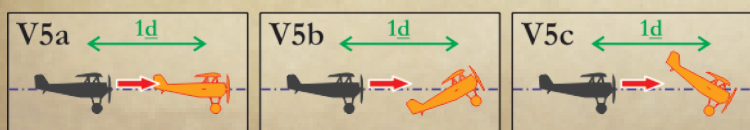
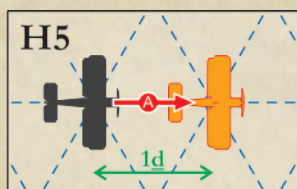
From some positions, only the fixed and flexible nose machine guns can fire, and from others, only dorsal or ventral machine guns. The following subtitles cover all the positions, with diagrams which illustrate all situations.

"H" (horizontal) schemes show a view from above, while "V" (vertical) schemes show 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 is from the point just behind the target aircraft (distance is 1d). In doing so, the attacker must face the target. In this case, after rolling the red dice, the **column A** in the chart is observed. Fighters/scouts with fixed machine guns may fire from this position.

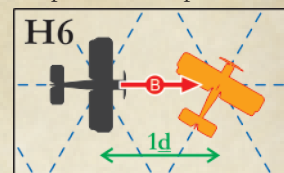
The firing plane and the target plane may be at the same (V5a - V5c) or at adjacent altitude levels. The firing plane must be tilted towards the level at which the target aircraft is flying (V5d - V5i).



As seen in the diagrams, the target aircraft may be in horizontal flight or in announced climbing or descending positions.

FIXED MG: ANGLED FROM BEHIND

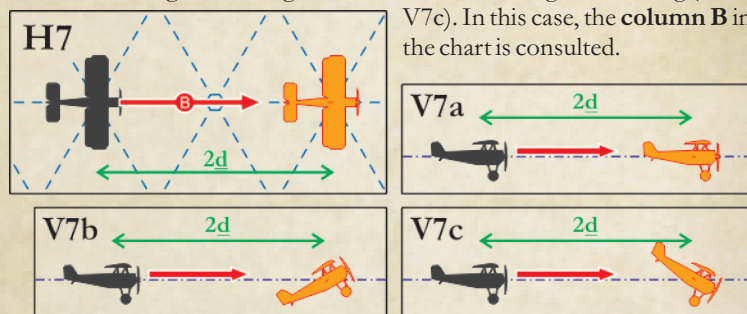
As in the case of "Strictly from behind" position, the planes can be at the same or neighboring altitude levels, at a distance of 1d (see V5a - V5i). From these positions, the attacker plane has less time to aim, so after firing and rolling the red dice, the **column B** (which gives less chance for achieving a hit) in the chart is consulted.



FIXED MG: FAR FROM BEHIND

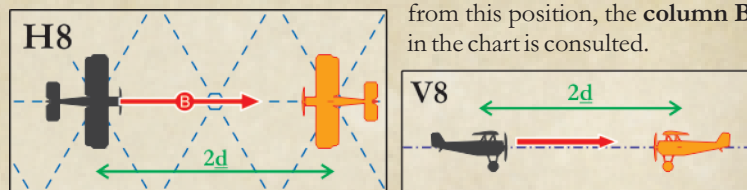
In this case, the firing plane is 2d away, strictly behind the target, and it must be directed towards the target (see H7). Shooting at an angle from this distance is not allowed (extremely unlikely to hit the target).

Airplanes must be at the same altitude. The target aircraft may be in horizontal flight or in stages of announced climbing/descending (V7a - V7c). In this case, the **column B** in the chart is consulted.



FIXED MG: FRONTAL

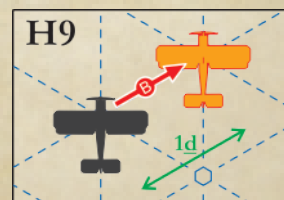
Frontal position is possible only at the distance of 2d. The firing plane must fly straight towards the target plane (see H8). Airplanes must be at the same altitude and in horizontal flight (see V8). When shooting from this position, the **column B** in the chart is consulted.



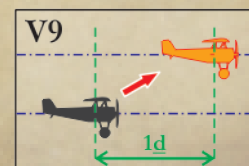
FLEXIBLE NOSE MG: POSITIONS

A flexible nose machine gun can also be temporarily locked in the forward position and thus act as fixed. All the previous positions (H5-H8, V5-V8) apply for flexible nose mg as well (if the firing plane is directed toward the target - both horizontally and vertically).

In addition, the aircraft with flexible nose machine guns can also shoot sideways or upwards, if flying parallel with the target airplane (in the same direction). Both aircraft must be in horizontal flight. In this case, the **column B** in the chart is consulted.



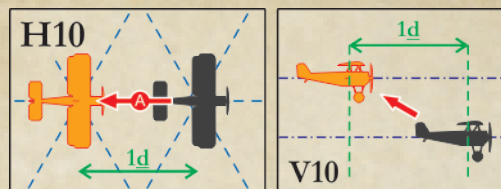
In relation to the firing plane, the target aircraft can be straight in front but on a higher altitude level (see H5 and V9). Or it can be angled in front (H9) - on the same level (V5a) or at a higher level (V9).



DORSAL MG: STRAIGHT BACKWARDS-UPWARDS

The rules do not allow a piece to reach a position directly in front of an aircraft at the last point of its movement, and therefore it is not possible to fire at an enemy aircraft from that position if they are at the same altitude level.

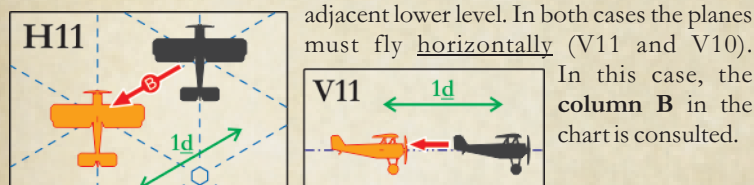
The dorsal machine guns can tilt and shoot at planes that are one altitude level above. In this case, a plane can fire from a point in front of the target aircraft - see schemes H10 and V10. Both planes must fly horizontally and in the same direction.



*This attack is very effective because it's coming from the opponent's blind angle, so in this case, consult the **column A** in the chart.*

DORSAL MG: ANGLED BACKWARDS

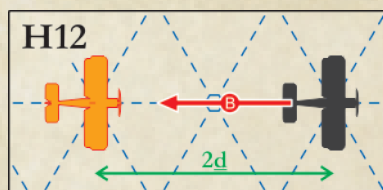
Aircraft with dorsal machine guns can shoot from this position, see H11 (in parallel, front-sideways from the target, at a distance of 1d). The firing plane can be at the same level as the target but also at the adjacent lower level. In both cases the planes must fly horizontally (V11 and V10).



In this case, the **column B** in the chart is consulted.

DORSAL MG: FAR BACKWARDS

Dorsal machine guns can offensively shoot backwards at a distance of 2d. In this case, both aircraft must fly horizontally at the same altitude. The **column B** in the chart is consulted.



THE SHOOTING OUTCOME (CHART)

It has already been said that two red dice are rolled when firing, and the numbers obtained are added together. Depending on the shooting position, column A or B in the table chart is then consulted.

ROLLED NUMBERS	A	B	LONG BURST
3% 2	JAMMED ➡	JAMMED ➡	➡
5,5% 3	MISS ✕	MISS ✕	
8% 4	MISS ✕	MISS ✕	➡
11% 5	MISS ✕	MISS ✕	
14% 6	DAMAGE 🛩️	MISS ✕	➡
17% 7	DAMAGE 🛩️	MISS ✕	
14% 8	DAMAGE 🛩️	MISS ✕	➡
11% 9	DAMAGE 🛩️	DAMAGE 🛩️	
8% 10	TAKEDOWN 🛩️	DAMAGE 🛩️	
5,5% 11	TAKEDOWN 🛩️	TAKEDOWN 🛩️	
3% 12	TAKEDOWN 🛩️	TAKEDOWN 🛩️	

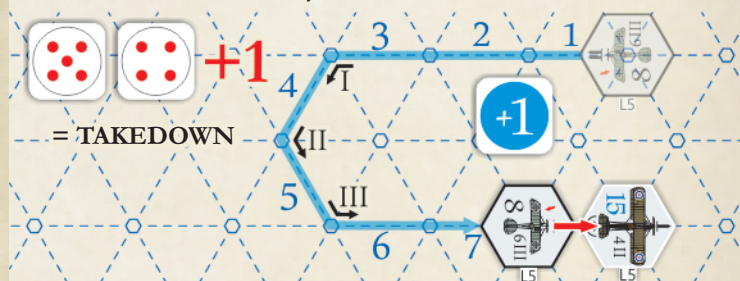
The chart shows the shooting outcome from a single machine gun. If the firing plane has two coupled machine guns - the sum of the numbers on the red dice is increased by 1. If it has 3 coupled machine guns (Fokker E.IV), the sum is increased by 2 (**2 mg = +1 / 3 mg = +2**).

The chart shows that the result of firing can be: **takedown** of the enemy aircraft; **miss**; **damage** to the enemy aircraft; or **jamming** your own machine gun (which also counts as a miss).

TAKEDOWN

If, according to the chart, the shooting results in a **takedown** - the destroyed piece is removed from the board. After that, the player whose aircraft was attacking continues with their turn.

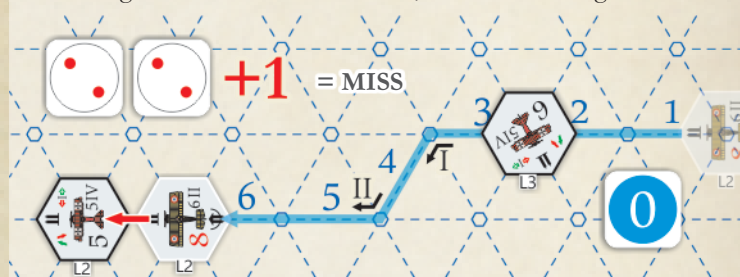
In the following figure, both planes are at L5 level. The German aircraft made a maneuver in which it used the maximum number of turns for that type of aircraft (III) and reached the most favorable firing position (strictly from the rear). On the red dice they got the numbers 5 and 4. Since it has two machine guns, 1 is added, so the total sum is 10. According to column A in the chart, the result of shooting is TAKEDOWN of the enemy aircraft.



MISS

If the chart shows the shooting outcome as a **miss** - the target aircraft remains in the game, with no consequences. If the target has a machine gun from which it can defensively shoot at the attacker - a break turn is played. If this is not the case, the game is resumed by the player on the turn who continues to move their pieces.

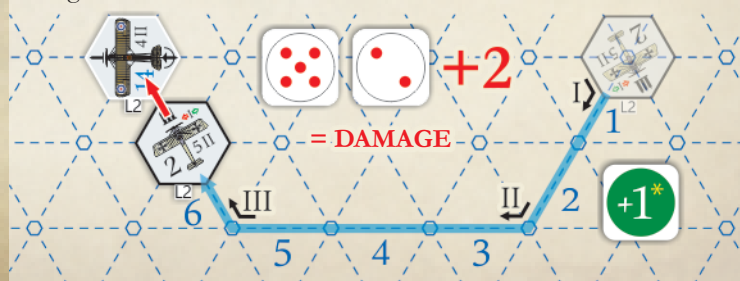
In the following example, a French aircraft shoots at an enemy aircraft strictly from the rear. The sum of the numbers obtained on the red dice (2 and 2), together with +1 (due to firing from two machine guns) is 5. According to the column A in the chart, the result of firing is a MISS.



DAMAGE

If the chart shows **damage** as a result - the targeted aircraft remains in the game, but it is damaged in the further course of the game. The multicolor die is then rolled immediately to determine which part of the aircraft is damaged.

In the following picture, a German plane comes behind the British and shoots. Red dice show 5 and 2, then +2 is added (three machine guns shooting), so the total sum is 9. According to column B in the table, the firing result is DAMAGE.



TYPES OF DAMAGE



If the blue symbol is rolled on the multicolor die, the **wings** are damaged. A blue marker is placed on that piece and in the further course of the game, the aircraft goes one step less per movement, comparing to an undamaged aircraft (*due to broken aerodynamics and damaged wing structure, it has to go slower*).



If the orange symbol is rolled, the **tail surfaces** are damaged. An orange marker is placed on that piece and in the further course of the game, that aircraft can make one turn less than an undamaged aircraft in each movement.

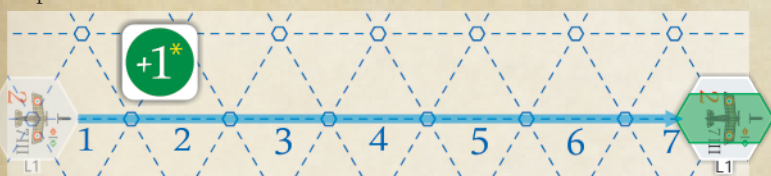


If the red symbol is rolled, the **machine guns** are damaged. A red marker is placed on that piece and in the further course of the game that plane cannot fire. If the aircraft doesn't have any machine guns, the marker is placed anyways.



If the green symbol is rolled on the multicolor die, the **engine** is damaged. A green marker is placed on the affected piece and in the further course of the game that plane goes two steps less in each movement.

The engine can also be damaged without any shooting. When the green Slider on a Control Panel of a fighter plane is on the far right square labeled with *? - it means that it has used up all the safe usage of full throttle. If the player wants to risk, they can once again roll the green die. If they get: +2, +3, +4 or +5, the engine is still functional - the green Slider gets removed from the Control Panel (that aircraft cannot use full throttle anymore during the game). However, if the player rolls 0* or +1* - it means that the engine is overused and thus damaged (a green marker is placed). In that and all the subsequent movement, the aircraft goes two steps less than normal.



In this example, the French aircraft has already used full throttle 3 times (maximum). In the current position, it is in danger and it's trying to escape from the danger zone by full throttle. The player risks, rolls the green die and gets +1*. This means that they damaged the engine (the green marker is placed) thus the piece moves: 7 (speed) +1 (die) +1 (straight flight) -2 (damaged engine) = 7 steps.

The combination of any two types of damage means that the plane is taken down. For example, if an already damaged airplane is shot and the result is damage - there is no need to roll the multicolor die (the piece is removed from the board).

MACHINE GUN JAMMING

If both red dice roll number 1 (sum = 2) - the firing outcome is **machine gun jamming**. Thus, the enemy aircraft was neither shot down nor damaged. On the Control Panel of the aircraft which has fired, the red Slider is placed in a transverse position (it is moved one position to the right as well - some ammunition is spent anyways).



In order for a blocked machine gun to fire again, it is necessary for the player to **unblock** it in one of the following turns. When unblocking, the aircraft cannot change altitude and it can only make one turn (*the pilot is engaged in unblocking machine guns and cannot perform complex flight maneuvers*).

If the jammed machine gun is not operated by the pilot (dorsal, ventral and flexible nose mg, with the exception of Airco DH.2), the aircraft may perform any maneuver during unblocking.

When the machine gun is unblocked, the Slider returns to the upright position. It is not possible to fire during the turn in which the machine guns get unblocked.

LONG BURST

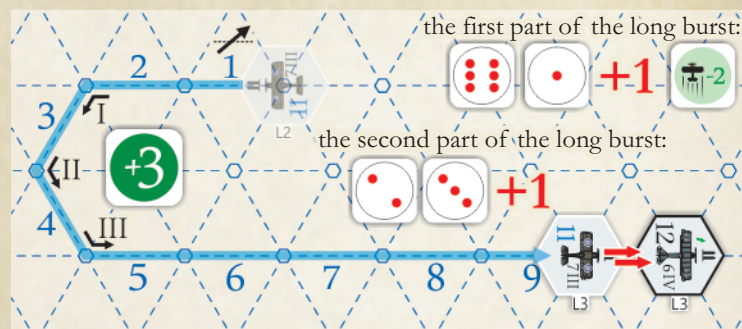
In fighter duels, it is best to use short and precise bursts (~3 seconds). However, in order to increase the chances of hitting the target, a **long burst** can be fired. If a normal, short burst fails to take down the enemy aircraft (i.e. if it was a miss or a damage), the player whose aircraft is attacking can decide to continue firing - to fire a long burst. It is performed by rolling the red dice one more time (the red Slider on the Control Panel is moved for one more place to the right).

The rule that two damage shots automatically cause a takedown, applies in this case too (if both parts of the long burst result in damage).

It is not possible to fire a long burst from all positions, because in some cases, the firing time is too short. A long burst can be fired only if the airplanes are flying in parallel, in the same direction (see the schemes: H5, H7, H9, H10, H11 and H12 ; V5a, V5f, V5h, V7a, V9, V10 and V11).

When firing a long burst, the machine gun is critically heated, making it more likely to block during the second roll of the dice (~40%). If, on the second roll, the sum of the numbers on the red dice is **2, 4, 6** or **8** - the result is jamming (see column LONG BURST in the chart).

Between the first and second roll of the red dice, if the target airplane has machine guns from which it can defensively shoot at the attacker - a **break-turn** is played. If the result of the break turn is a damage to the machine guns or a takedown - the aircraft that started the attack cannot fire the second part of the long burst.



In the previous picture, a British fighter is firing with the result of damage to the engine of a German aircraft. Since the German plane does not have a dorsal machine gun, it can't return fire (break-turn) - the British plane continues firing undisturbed. And this time, the result is also damage. There is no need to re-roll the multicolor die, as the two damage automatically destroy the airplane.

DEFENSIVE SHOOTING

If a target airplane is firing back at the attacker - this is a **defensive shooting**. To perform defensive firing - the opponent's turn is interrupted for a moment in order to play a **break-turn**.

The procedure is this: during their move, one player moves their pieces and when one of them is in adequate position - it shoots at an opponent's piece (offensive firing). If the result of that shot is a miss or damage to the wing / tail / engine - the other player has the right to make the break-turn (and perform defensive firing). The condition is that the defensive aircraft has machine gun(s) capable of firing at the attacker.

If the conditions are met - a break-turn is started: two red dice are rolled, the numbers are added together and **column B** in the chart is consulted (valid for any position). Just like offensive firing, the result of a defensive firing can be a miss, damage, a takedown of the opponent's plane or jamming of your own machine gun(s).

When the break-turn is completed, the player who was on the move continues to play. While one player's turn is ongoing, the other player can repeatedly come into the situation to perform a break-turn.

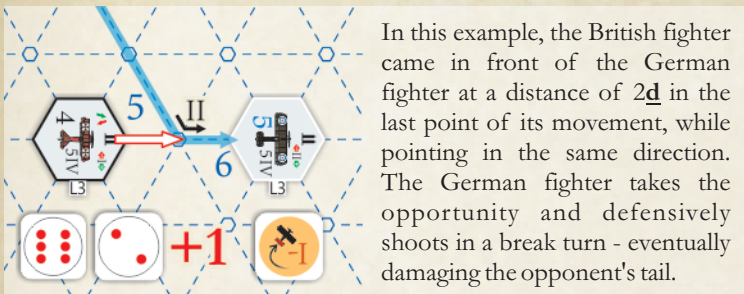
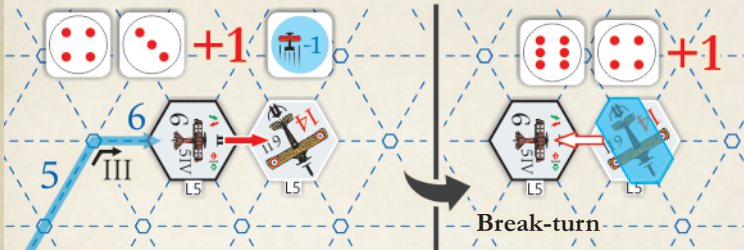
Because of their size and sluggishness in real battles, bombers cannot approach and attack smaller aircraft. Because of this, there is no possibility for them to fire offensively in this game. Bombers can only use their machine guns defensively, in break-turns (that's why the symbols of their machine guns are depicted in gray color).

POSITIONS FOR DEFENSIVE SHOOTING

Generally, in any situation when an aircraft is under attack, it can shoot back (if it has machine guns which can shoot in that direction). See the positions in the previously shown "H" and "V" schemes.

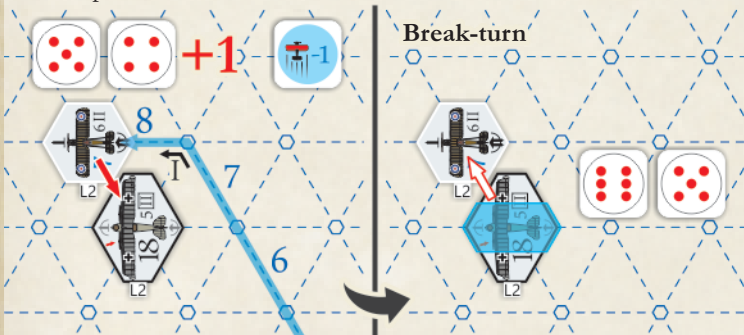
An aircraft can shoot defensively even if the opponent didn't shoot offensively (didn't want to, didn't have ammunition or the aircraft doesn't have machine guns which can shoot in that direction). This can happen if an enemy aircraft comes to a position as if it would (could) shoot offensively. See the examples:

In the following example, a German fighter shoots (offensive firing) and damages the wings of a French scout. In a break turn, the French scout shoots (defensive firing) and takes down the opponent.

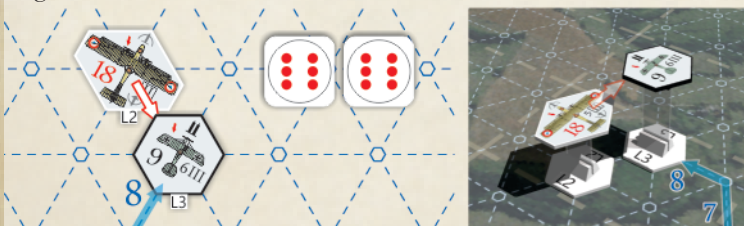


In this example, the British fighter came in front of the German fighter at a distance of 2d in the last point of its movement, while pointing in the same direction. The German fighter takes the opportunity and defensively shoots in a break turn - eventually damaging the opponent's tail.

In the following pictures, a British fighter fired at a German bomber from the rear machine guns (offensively), but the result was only damage to the wings. The bomber fired defensively and shot down the British plane in a break turn.

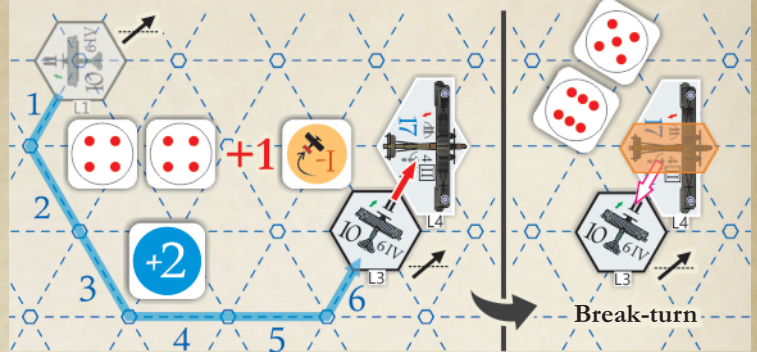


In the example below, a German fighter flying at L3 altitude level comes to a point at an angle behind of a French bomber flying at L2 level. The bomber takes the opportunity and defensively fires at the fighter in the break turn and shoots it down.

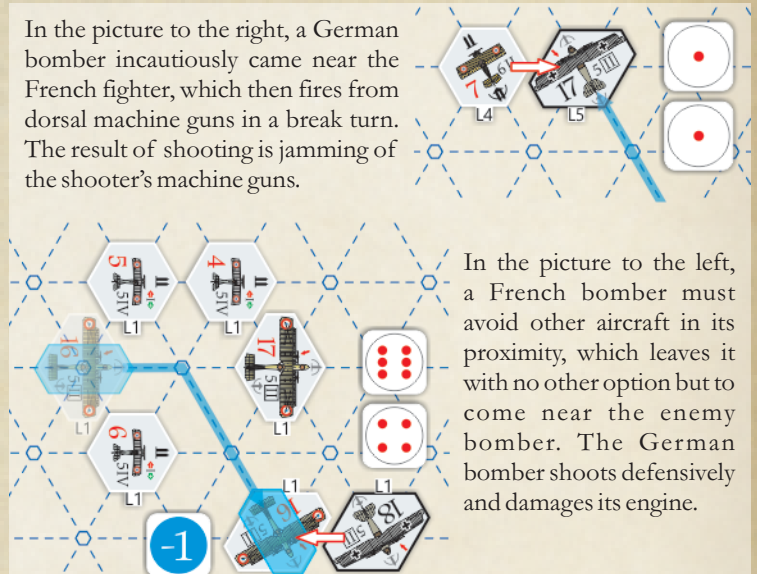


This game set doesn't have any aircraft which could shoot at the bomber from the position as in the picture above (because flexible nose machine guns cannot shoot downward), nevertheless, this is also considered as a potential offensive position (the planes are flying in parallel in the same direction). Therefore, defensive shooting is allowed in this case as well.

In this example, a German fighter uses its specific ability to climb two altitude levels in one movement, from L1 to L3, and it offensively shoots at the British bomber on L4. The firing result is damage to the tail. In a break turn, the bomber shoots back from its ventral machine gun and takes down the opponent.



In the picture to the right, a German bomber incautiously came near the French fighter, which then fires from dorsal machine guns in a break turn. The result of shooting is jamming of the shooter's machine guns.

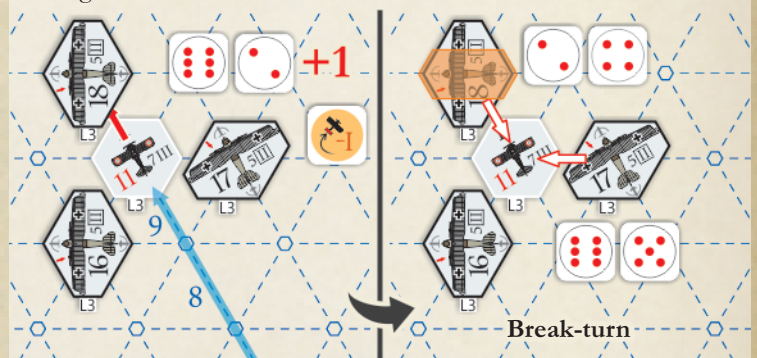


In the picture to the left, a French bomber must avoid other aircraft in its proximity, which leaves it with no other option but to come near the enemy bomber. The German bomber shoots defensively and damages its engine.

The previous two examples show that, even though they are not allowed to shoot offensively, bombers can become targets of defensive shooting.

An aircraft can become target of multiple defensive shooters in a single break turn. This is most often the case when bombers fly in a tight formation and thus protect each other from enemy fighters. See an example of cooperation in defense:

The bottom left picture shows a French fighter approaching the German bombers. It shot at the plane number 18 and the result was damage to the tail.



During the break-turn, the aircraft number 18 can fire on defense from the dorsal machine gun. The player rolls a red die and the result is a miss. In the same break-turn, the aircraft number 16 cannot fire because it does not fly in the same direction as the French plane (*in reality, it means that they are only a fraction of a second at such a close distance*). However, the aircraft number 17 can fire from the flexible nose machine gun. The player rolls red dice and the result is a takedown.

One machine gun (or a pair of coupled machine guns) can only fire once during the opponent's turn (even if multiple break turns are played during that time).

THE BORDER ZONE

Unlike land or water battlefields, which are often limited by coasts, rivers, chasms, forests, etc. air battles can be fought in an unlimited space. The board for this game is quite large, but still limited, and because of that, the players could be able to move their pieces all the time through the points near the edge of the board. Doing so drastically reduces the possibility of an opponent putting their piece in a firing position, and that's why there is a special rule that governs movement in that area: the pieces cannot finish movement in the border zone in two consecutive turns. The border zone is bounded by the edges of the board and the nearest thick white dashed lines (see the figure):



PILOTS

The rules of this game take into account the different basic and specific characteristics of different types of aircraft. This is very realistic, but the outcomes of the air duels are equally influenced by the skill of the pilots operating the planes. The most challenging aircraft for pilots are fighters. The assumption is that among the pilots of fighters, most are **average**, but there are also **aces** and inexperienced **rookies**. The difference in their skill is present when shooting:

- The firing result of **average** pilots is determined as described previously;
- When **ace** pilots shoot, any sum on the red dice that results in damage to the opponent's aircraft is an automatic takedown (aces are extremely accurate and most often target and hit the opposing pilot);
- When the **rookies** shoot, 1 is subtracted from the sum of the numbers rolled on the red dice, and then the chart is consulted.

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

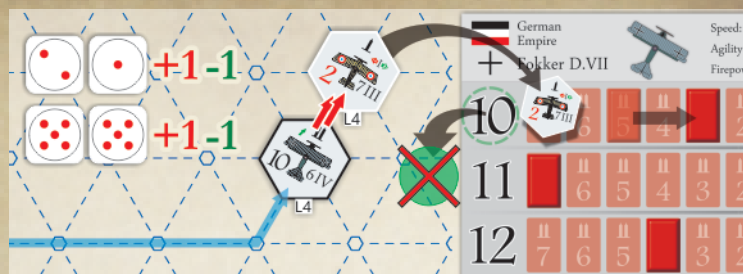
Players can place 3 red and 3 green markers on the numbers of selected fighter planes on the Control Panels before the start of the game. That way you can immediately see which planes are being piloted by aces and beginners on both sides. *This is also quite realistic because, at least as far as aces are concerned, during the war they intentionally painted their planes with vibrant colors to make them recognizable.*

If players want their choice of aircraft in which aces and rookies fly to remain unknown to the opponent - then they need to write the numbers of the planes with pilot aces and beginners on separate pieces of paper. Only when one of the planes in which the aces or rookies fly comes to a shooting opportunity - the player is required to show the paper and place the appropriate marker on the Control Panel. So, during the first shooting, it is revealed which kind of pilot is in the plane.

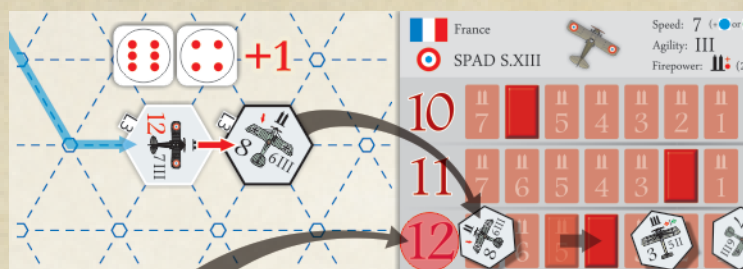
GAINING EXPERIENCE

The reality of war was harsh on beginners, who were often taken down in the first battle. If they were to survive, they would gain experience and skill in the coming fights, so some would quickly become aces. In this game, the rule applies: a rookie pilot shoots according to the rules for beginners (-1 to the sum of the numbers) until he takes down the first opponent! The green marker is then removed from the Control Panel and from that point on he is treated as an average pilot.

If an average pilot (or a beginner who shot down an opponent and thus became average) manages to shoot down three enemy planes during the game - he becomes an ace! Then a red marker is placed on the number of his aircraft on the Control Panel and from that moment on, any damage during firing is treated like a takedown.



In the example above, a German rookie uses a long burst (his third offensive firing) and shoots down a French fighter. The piece of the downed fighter is placed on the Control Panel next to number 10 as evidence that the pilot of that plane shot it down. The green marker is removed from the number 10 as that pilot is no longer a beginner!



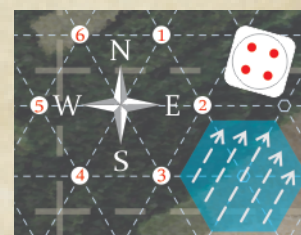
In this example, a French pilot who has already shot down two German planes during the battle, manages to take down a third one. A red marker is placed on his number (12) on the Control Panel - he has become an ace!

WEATHER FACTORS

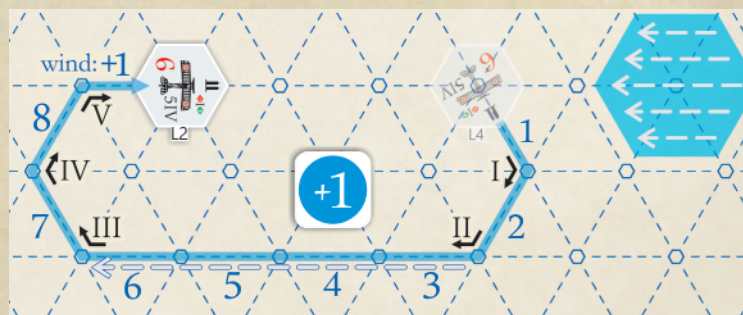
In addition to the aircraft and pilots themselves, the weather also influences the flow of air combat. The wind significantly affects movement, especially for old and slow aircraft. Targets in front of the Sun can be difficult to see, so combatants wanted to fight battles when the Sun was behind them (at least in the beginning of the fight). In the clouds, the visibility is significantly reduced which also affects duels in the air. In this game, the weather conditions that affect movement or firing are: **Wind**, **Sun** and **Clouds**. These rules are optional, since the weather can also be calm, clear while the Sun being too high to disturb aiming.

WIND

The wind indicator is positioned anywhere along the edge of the board. The direction of the wind is determined by rolling a red die: if 1 is rolled, the wind blows from the northeast, 2 - E, 3 - SE, 4 - SW, 5 - W, and 6 - NW. In the example to the right, the wind is blowing from southwest to northeast.



When a piece moves, if it goes half or more of its steps strictly **down the wind**, it must move one more step (in any direction allowed by the rules of movement). If it goes half or more steps strictly **up the wind**, the last step is taken back.



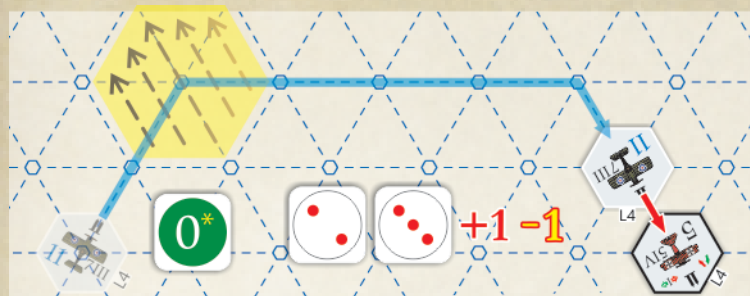
In the example above, the plane has speed 5, it got +1 on the blue die, because of its descent from height L4 to L2 it gets +2 to speed, which is a total of 8. Of these 8 steps, 4 are made downwind, so it has to add the 9th step in any direction. The total number of downwind steps now becomes less than half (4 out of 9) but the situation before the extra wind step counts.

THE SUN

Before the game starts, players place a "Sun" marker on some part of the board near the edge. The direction of the Sun's rays is determined by rolling the blue die: **-1** means the Sun is on the east (rays go towards the west), **0** – SE, **+1** – SW, and **+2** – W. The example to the right shows the rays going towards the northwest (late morning).



If the firing direction is **opposite to the direction of sunlight** – **1 is subtracted** from the number rolled on the red dice. *The sunlight blinds the shooter which results in less chance to take an enemy down.*



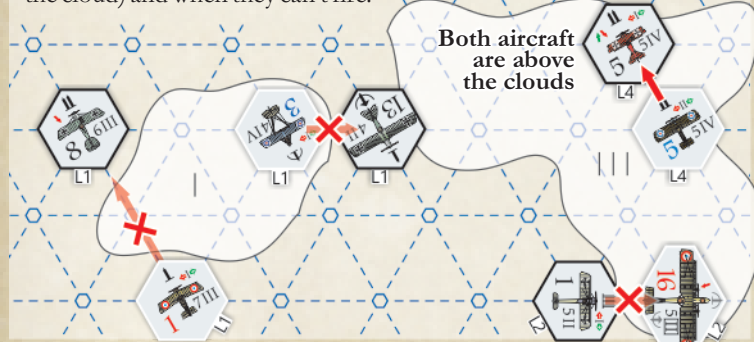
The British aircraft came into the most favorable firing position and rolled a 2 and a 3. This number is increased by 1 as it shoots from two coupled machine guns and, according to column A in the table, it would be sufficient to damage the enemy aircraft. However, the firing direction is opposite to the direction of the Sun's rays, so 1 is subtracted from this sum (6-1=5). Therefore, the result of this firing is a miss.

CLOUDS

The clouds prevent firing if at least one of the engaged aircraft is in the clouds. When shooting from a distance of 2 and the point between the aircraft is in the clouds - the firing is also not allowed.

Before the game starts, players can set up clouds. The markers can be arranged symmetrically or in any other way. Each cloud marker shows the altitude at which it is present: L1, L1-L2 and L1-L3. Planes can get in and out of the cloud seamlessly.

The picture below shows situations when planes can (if they're above the cloud) and when they can't fire.



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 diversity, the kit features also the scouts and the bombers, whose primary battle goals are reconnaissance and bombing, while fighting with enemy aircraft is secondary.

With the exception of the Dogfight mode, players can **disarm their scouts** (to remove machine guns and ammunition) - only one red Slider per aircraft is placed on the Control Panel, with the white side up. In this case, the disarmed aircraft is **1 step faster** because it has less weight. A player can disarm just one, two or all three of their scouts. *That way, scouts lose the opportunity to engage in fights but they increase their chances to escape from the enemy fighters.*

When a **multi-engine bomber drops all the bombs**, from then on, its **speed is increased by 1**, as it no longer has the extra weight.

Scouts can also carry a bomb each, so they too can perform a bombing task. In this case, as long as a **scout carries a bomb**, it cannot fire offensively.

The limit of **maximum 6** fighters in the Combat Zone applies also to scouts in the role of fighters (Dogfight mode). In modes with specific tasks (Reconnaissance or Bombarding), in addition to fighters, both players can have all their scouts/bombers in the Combat Zone.

DOGFIGHT

This mode features only fighter planes, and also scouts in the role of fighters. The goal of the game is simple - **shoot down as many planes as possible**. The game lasts until one of the players loses all the planes. Under one criterion, the winner is the player with at least one plane remaining in the Combat Zone. However, the total performance (number of planes destroyed and damaged) also counts, and the winner can be determined by counting battle points. In this case, every takedown is worth 1 point, and every damaged airplane that managed to withdraw from battle is worth 0.5 (please note that airplanes can be withdrawn from the Combat Zone only if they are damaged or without ammo).

For example: The game with 12 planes on each side has ended. The player with French planes has two active fighters in the Combat Zone, and the player with German planes none. By this criterion, the first player is the winner. However, of the remaining 10 French planes, 6 were downed, 3 were damaged and only one was withdrawn because it had used up all its ammunition. The score of the player controlling German aircraft is: 6×1 point (downed planes) + $3 \times 0,5$ (damaged planes) = 7.5 points. Out of the 12 German planes, only 3 were shot down, 4 were damaged and 5 left the fight because they had consumed all their ammunition. The score of the French planes is: $3 \times 1 + 4 \times 0,5 = 5$ points. So by this criterion, the player who used German planes won. In these cases, our suggestion is to play a bonus round with the remaining undamaged airplanes. The surviving planes would go back to the airport to get fuel and ammo. So, in the last example, France would use $2+1=3$ planes, and Germany would use 5.

"Intercept the General" scenario:

A French general, a member of the headquarters, arrives on a two-seater unarmed aircraft (Salmson 2, number 13) to inspect units at the front. The Germans have information about that flight and send their fighters to intercept and shoot it down.

The board extensions are positioned as shown below. The French aircraft with the General should exit on the opposite side of the Combat Zone - to the east. There are 6 fighters assisting (player's choice). The Germans try to intercept the flight with 6 fighters at their disposal (also player's choice). The first to play is a player with French planes who must immediately put the scout into the Combat Zone. The scout number 13 flies without machine guns and ammunition (which makes it faster - 7 instead of 6). If the scout makes it, the player controlling it is the winner, otherwise, the player with German planes wins.



RECONNAISSANCE

Scouts 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 and leave the Combat Zone on the side from which they came (in order to get the photo negatives to the airport). Fighter planes have the task to shoot down enemy scouts and protect their own.

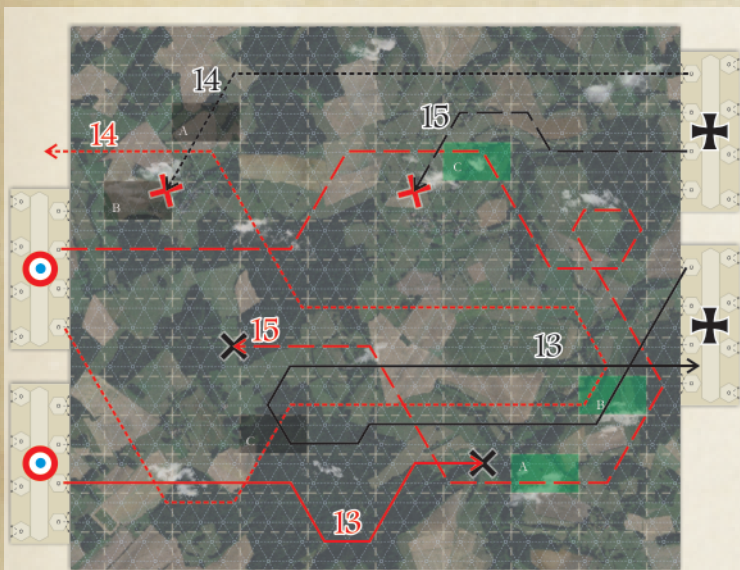
In order to take the pictures, the scout needs to fly through at least two points in a Task Zone. The zones can be photographed from any altitude, unless the players agree otherwise. Upon leaving the zone, a photo marker with a corresponding letter (A, B, or C) is placed on the Control Panel of the scout.

In the turn when the pictures are taken, the scout must not change altitude (not even if the maneuver is performed in two turns).

Only when a scout has left the Combat Zone on the side it started from, it is considered that the task is fulfilled (the Task Zone marker is removed from the board).

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

Before the start, players should set up 3 + 3 Task Zones on the side opposite to each player's setup. The zones should be symmetrical so that both players have the same conditions (see the example below).



The image above shows the paths of all reconnaissance aircraft. The French No. 13 was shot down before it could reach any Task Zone, No. 14 successfully took a picture of one zone and left the Combat Zone (3 points). Scout No. 15 has taken pictures of as many as two zones, but has been shot down on its return. Of the German scouts, only the one with number 13 completed the task. Under the main criterion, the result in this game is Draw 3-3. In this case, the winner can be determined by counting the number of takedowns (1 pt) and damages inflicted (0.5 pt).

In this mode, the scouts are the first in the order of movement in each turn (from lowest to highest number), and the fighters move after. *The movement order is switched in order to make it easier for fighters to take positions according to the final positions of the scouts.*

At least one scout must be brought into play in the first turn and there must always be at least one in play (in the Combat Zone or at the Access Points).

This mode can also be played in an **asymmetrical setting** - only one player is tasked with photographing the three zones. In addition to scouts, they have fighters that protect them, while the opponent only has fighters. If a player manages to photograph two or three zones – they are the winner. If only one or no zones are photographed - the winner is the opponent.

"Flying High" scenario:

It is played on a board composed of two bifold segments. German planes are on the North side and French on the South. Scouting zones and clouds are arranged as shown in the picture. The influence of wind and Sun can be neglected in this game.

Each side has 9 planes: 3 scouts and 6 fighters of their own choice. The task is to photograph the zones from the highest altitude - L5.



BOMBARDING

This mode has two variants: **zone bombing** and **bomber breakthrough**. The bombers have the main role, and they can carry two or three bombs each. Scouts can also participate in the game - in the bombing role, carrying a bomb each; or in the role of fighters (note that they can shoot offensively only if they don't carry a bomb). The fighters have the task of shooting down opponents and protecting their planes. Both variants can be played with an asymmetrical setup.

In this mode, the order of movement is the following: bombers, scouts and then fighters.

At least one bomber (or scout with a bomb) must be brought into play in the first turn and there must always be at least one in play.

The **zone bombing** variant is very similar to the scout mode, only in this case, bombers should 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 turn. The bomber can drop its second bomb in another zone or in the same zone again, but only in the second flying over (one of the following turns).

Each dropped bomb is worth 5 points (in this case, 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 obtained.

The winner is determined by counting points. According to the main criterion, only points brought by dropping bombs (5pt each) and shooting down enemy bombers (1pt each) are added. By the second criterion, all points are counted - 1pt for each enemy aircraft downed and 0.5 for each enemy aircraft damaged.

In the **bomber breakthrough** variant, they have task to go through the entire Combat Zone and exit the opposite side of the board (in order to carry out strategic bombing).

Bombers are worth 5 points each (the ones that succeed in breaking through). Scouts are awarded 3 points each (those carrying bombs and managing to break through).

According to the main criterion, only points brought by bombers and scouts that break into enemy backgrounds are counted. According to the secondary criterion, points from the destruction / damage of enemy aircraft (1 and 0.5, respectively) are also added.

The following figure shows schematically the flight of all the bombers in the bomber breakthrough variant. It can be seen that all the British bombers were shot down and that two scouts managed to break through (6 pts). On the German side, two bombers and one scout made it (13 pts).



"Attack at Dawn" scenario:

This is an asymmetrical setup. German bombers set off early in the morning to break into enemy background. Scouts armed with bombs also fly with them in formation. This mixed formation is protected by 9 fighters (of player's choice). They want to take advantage of good weather without clouds, a favorable wind in the back (blowing from east to west) while the Sun blinds the opponent. The French are ready to welcome the opponent with all 12 fighters. If 4 or more bombers/scouts manage to break through - the winner is the German side. If 3 bombers/scouts break through - the result is a draw. In other cases the winner is the French side.

COMBINED MODE

Players may arrange for the game to be played in combined bombarding-reconnaissance mode. First, the bombers should bomb the target zones (each bomb is worth 5 points). Afterwards, the scouts will photograph the results of the bombing (each negative that returns to the departing airport is worth 3 points). Taking down and damaging enemy aircraft is also counted (1 / 0.5 points).

NOTES

This game can be equally interesting even if not all the rules are applied. We advise this in the first few games, as well as for younger players. For example, the whole game can be played at one altitude level, the rules related to the specific characteristics of individual aircraft may not be applied, or playing without the effect of clouds, wind nor sun.

For more experienced players, we suggest the "**Ace vs ace**" variation (especially for the Dogfight mode), where all fighter pilots are considered aces. In this case, there is no damage to the aircraft, only machine gun blockages, misses and takedowns. This reduces the luck factor to minimum, so the player's positional and tactical ability to bring their pieces into a clear position is much more valuable.

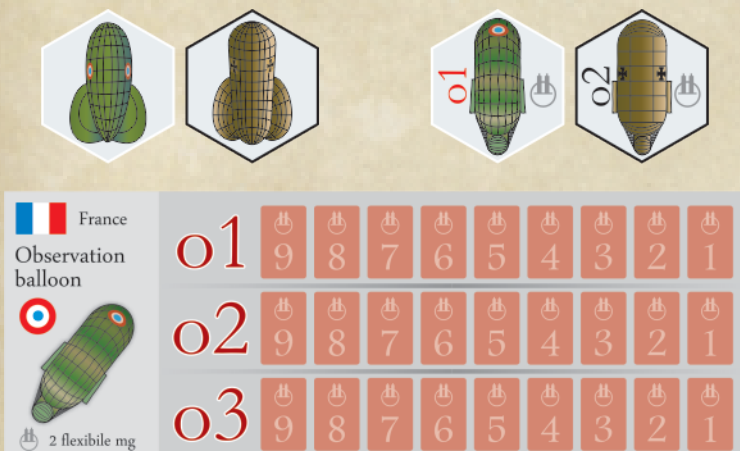
PLANE COLLISIONS

In real combat, some pilots made deliberate contact with the enemy aircraft with the intention of damaging it and knocking it down (for example, Russian pilot Taran). Most often, such a collision ended with the crash of both planes. This is not allowed in this game, as players could abuse it (if one player gains an initial advantage, they could intentionally cause collisions with all the remaining planes and thus force a win).

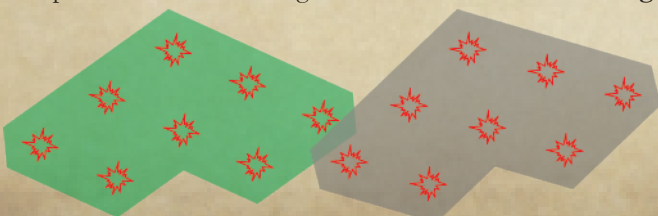
EXPANSION

The game **Age of Dogfights WW1** has its **Expansion**, which has new pieces, Control Panels and markers:

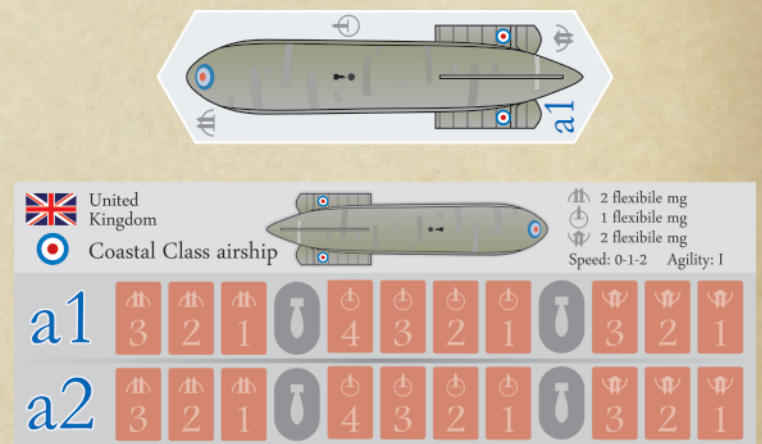
During World War I, **barrage balloons** and **observation balloons** were widely used. The set includes Control Panels and pieces representing German and French Barrage and Observation balloons. The brochure lists the rules and scenarios related to them.



Machine guns were often located on land near tied Observation balloons, protecting them from enemy airplanes. The expansion kit includes plastic markers indicating **action zones of land machine guns**.



Airships were also widely used. The most famous are the German Zeppelins which conducted strategic bombing deep in the enemy background. However, due to their large dimensions, the German Zeppelins are not included in the kit, but there are British **Coastal Class airships** (3 pieces and their Control Panel). During the war, they were used by the Royal Naval Air Service for patrol and against submarines. In addition to bombs, they were armed with machine guns, one of which was on top. In this game, they are tasked with bombing German targets in the background.



To give a wide range of airplanes to choose, the expansion set introduces aircraft from **Austria-Hungary**, **Russian Empire**, **Kingdom of Italy**, **USA**, **Serbia** and **Bulgaria**. Some of these planes have specific characteristics or weapons (fixed front machine gun firing at a 45-degree angle, a 37 mm gun instead of a machine gun, etc.). The brochure contains additional rules regarding these specific characteristics.

Austria-Hungary

Aviatik
(Berg) D.I



6 III

Hansa-
Brandenburg D.I



6 III

Phönix
D.I



5 III

Hansa-
Brand. CC



5 III

FIGHTERS

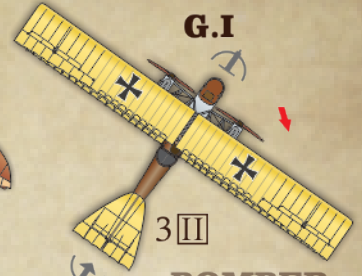
Lloyd C.V



5 II

SCOUT

Hansa-Brand.
G.I



3 III

BOMBER

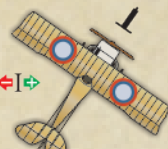
Russian Empire

Mosca-Byst.
MBbis



3 III

S-16
Sikorsky



3 IV

Grigorovich
M-11



4 III

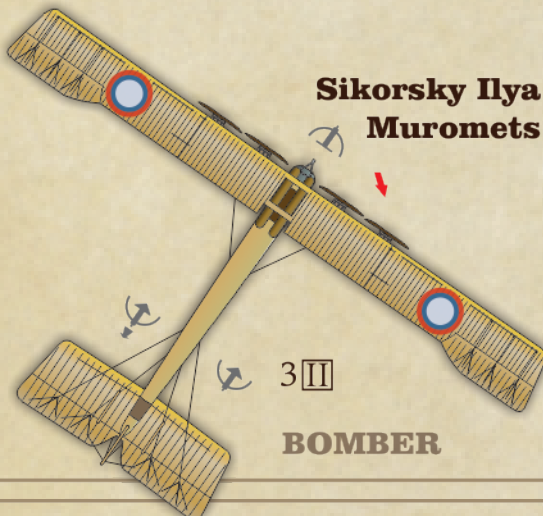
Grigorovich
M-9



3 II

FIGHTERS

Sikorsky Ilya
Muromets



3 III

BOMBER

Anatra DS
Anasal



4 II

SCOUT

Kingdom of Italy

Ansaldo
A.1 Balilla



7 III

Macchi M.5



6 III

Ansaldo SVA



7 II

FIGHTERS

Caproni
Ca.5



5 III

BOMBER

Pomilio
PE



6 II

SCOUT

USA

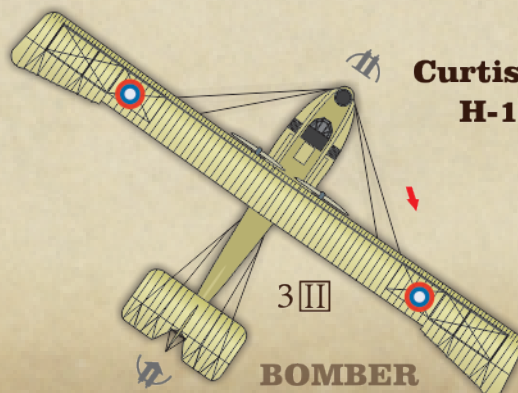
Packard-Le Père
LUSAC-11



7 II

FIGHTER

Curtiss
H-16



3 III

BOMBER

Serbia

Nieuport 24



5 IV

Spad S.VII



6 III

FIGHTERS

Dorand AR



SCOUT

4 II

Farman F.40



LIGHT
BOMBER

3 III

Bulgaria

Fokker
E.III



4 II

LFG Roland
D.II



5 III

FIGHTERS



Albatros
C.III

SCOUT

4 II

LIGHT
BOMBER



Otto
C.I

3 III

SUMMARY

All fights take place in the **Combat Zone** (the whole board), and before entering it, the pieces are put in **Patrol Zones** (located at the center of board Extensions). Just before entering the Combat Zone, plane pieces are placed on **Access Points** (located along the edges of the board Extensions).

Only if **damaged** or if they have **used up all the ammunition**, fighter planes may leave the Combat Zone. Once leaving the CZ, aircraft cannot re-enter.

At the start of the game, four of the aircraft are placed at the Access Points. The remaining pieces (not attached to stands) are placed in the Patrol Zones. The game starts by the first player, who moves the planes from the Access Points (by the order of designation numbers); then the second player and the process repeats.

All the planes that are in the Combat Zone must be moved, and all the pieces on Access Points must be brought into the Combat Zone.

There may be a maximum of 6 fighter planes per player in the Combat Zone (players can agree on different number). There must be at least one aircraft per player in the Combat Zone at all times.

The pieces cannot finish movement in the border zone (bounded by the edges of the board and the nearest white dashed lines) in two consecutive turns.

MOVEMENT

A piece always moves to a neighboring point just ahead or to a point that is left or right (at 60°). Any such transition from point to point is called a **step**. The number of steps a piece makes in one turn depends on the **speed** of the aircraft (**Arabic digit**) + the rolled number on the blue or green die. If a piece moves exclusively straight forward in a turn, it must move one more step.

Each time a plane flies with **full throttle** (green die), the green Slider on the Control Panel is moved once to the right.

The end point of movement can never be directly in front of another piece (if the piece is tilted - that is the point on a higher/lower altitude level).

DIRECTION CHANGING

During movement, changing direction is limited. **Agility** (Roman number) shows how many times an airplane can change direction in one turn.

Gyro. effect - these aircraft can make one/two turns more if turning to the right, or less if turning to the left, or opposite - see the symbols: . If turning left and right during a single movement, the effect is ignored.

If an aircraft makes **10 or more steps** in one turn (or if its Roman number is written within a square -) - it cannot turn in successive steps.

CHANGING FLIGHT ALTITUDE

In order for a plane to change the altitude at which it flies, it is necessary first to tilt its nose up or down at the last point of a movement. The piece must change altitude in the next turn.

An aircraft can descend 3 levels, or climb 1 level in a turn. According to how many levels are changed - the speed is increased / decreased (for example, change of altitude -2 means speed +2 and vice versa). Aircraft with **fast climbing** () feature can climb two levels in a single movement. Aircraft with **slow descending** characteristic () can descend maximum 2 levels at once. At the last point of movement, the player can either leave the piece horizontally or tilt it again. **Exception:** If an aircraft descends 3 altitude levels at once, it cannot tilt up.

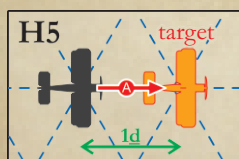
SHOOTING

In order to shoot, a piece must come to the **firing position** at the last point of its movement path. The firing procedure: roll two red dice, add up the rolled numbers and consult the chart.

When a plane reaches a position, the firing procedure is immediately done. After that, the rest of the pieces are moved and the process is repeated.

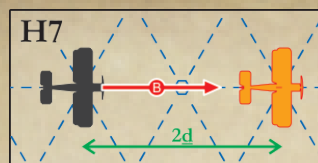
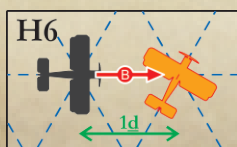
Each time the plane fires, the red Slider on the Control Panel is moved once to the right, even if the result is jamming (or twice, in the case of a long burst).

Fixed machine guns (/ /) shoot straight ahead. If the aircraft is tilted, it shoots at the adjacent altitude level. See the firing positions:



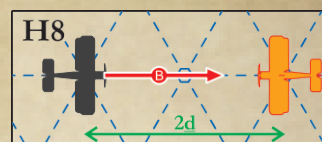
Strictly from behind (see H5) - The shooter and the target may be at the same or at adjacent altitudes. The shooter must be tilted towards the target, while the target may be tilted in any way. For the shooting result - see **column A** in the chart.

Angled from behind (see H6) - All the conditions are the same apart from the horizontal direction of the target (it is angled). Shooting result - **column B**.



Far from behind (see H7) - The distance is 2d - strictly behind. Airplanes must be at the same altitude. The target may be tilted in any way. Shooting result - **column B**.

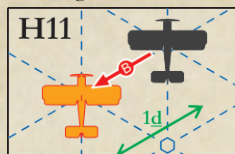
Frontal (see H8) - The distance is 2d - strictly in front. Planes must be at the same altitude and horizontal. Chart - **column B**.



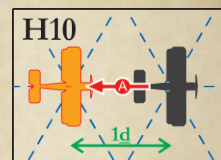
Flexible nose mg (/) - all the previous positions apply for these mg as well (H5-H8). It can also shoot in all three forward directions (and upwards), if flying parallel and in the same direction as the target (in this case - **column B**).

Dorsal machine guns (/) can shoot in three backward directions and upwards. The firing positions:

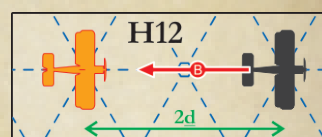
Straight backwards-upwards (see H10) - Both planes must fly horizontally and in the same direction. The target must be 1 level above. Chart - **column A**.



Angled backwards (see H11) - Planes must fly horizontally in parallel. The target can be at the same or adjacent higher level. Shooting result - **column B**.



Far backwards (H12) - Planes must fly horizontally at the same altitude. The target must be strictly behind. Chart - **column B**.



Ventral machine guns (/) shoot in three backward directions but only downwards. These mg can shoot only defensively.

THE SHOOTING OUTCOME

= JAMMED = MISS
 = DAMAGE = TAKEDOWN

The chart shows the shooting outcome from a single mg. If multiple coupled machine guns are firing - the sum of the rolled numbers is increased (2 mg = +1 / 3 mg = +2).

If the chart shows **damage** - the multicolor die is then rolled to determine the type of damage:

- 1 **wings** (blue marker) = speed: -1
- 1 **tail** (orange marker) = agility: -1
- machine guns** (red marker) = cannot fire
- 2 **engine** (green marker) = speed: -2

	A	B	LONG BURST
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

When the green slider on a control panel is on the far right rectangle (*?) and the green die is rolled once again, resulting in 0* or +1*, the **engine** is damaged.

Any two damages (of any type) means that the plane is taken down.

If the firing outcome is **machine gun jamming** - the red slider is placed in a transverse position. To **unblock** it, the aircraft must move without changing altitude and making only one or no turns (unless the jammed machine gun is operated by a second crew member).

In case of a miss or a damage, the shooter can roll the red dice one more time. A **long burst** can be fired only if the airplanes are flying in parallel, in the same direction. The chance of jamming is higher in this case, so apart from the column A or B, also see the column "long burst" in the chart. A break-turn is played between the first and the second part of a long burst.

DEFENSIVE SHOOTING

If the result of offensive shooting is not a takedown - the other player has the right to interrupt the opponent's turn for a moment in order to play a **break-turn**. In all cases of defensive firing, refer to the **column B**.

In any situation when an aircraft comes to a firing position, or as if it would (could) shoot, the attacked aircraft can shoot defensively (if it has suitable mg).

Bombers can only use their machine guns defensively (gray mg symbols).