

CANVAS EAGLES

War in the Skies
1914 - 1918



World War One Air Combat

Not to be sold - Private Copy

v 3.6.2

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1.00 Introduction

1.10 The Game

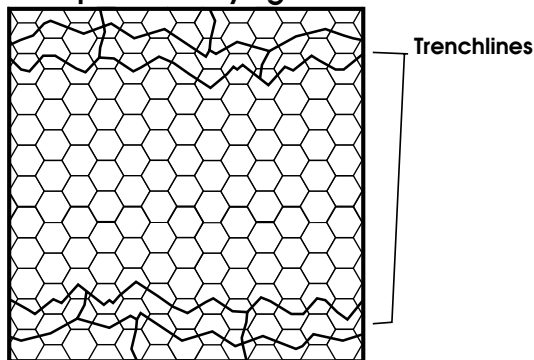
Canvas Eagles is a multi-player air combat game set in the time of World War One 1914 - 1918. Canvas Eagles provides the details of aerial combat: how the aircraft fly, and how they fight. Players then choose their aircraft and fight out their encounters using 1/72nd or 1/144th scale model aircraft.

1.11 General Game Background: Each player is a fighter pilot in either the Allied (French, American, Italian, Belgium, Russian, Japanese, British, and Common Wealth countries) or Central (German, Austro-Hungarian or Turkey) air service. Each game is a single dogfight in which players attempt to shoot down as many enemy aircraft as possible without being destroyed themselves. Some games may also depict the various bombing and reconnaissance missions typical of this time period. The completion of these missions will become as important as the destruction of enemy aircraft. There is no limit to the number of players which may participate in a single game.

1.12 Extra Equipment Required: The players need to provide a 1d6 die (six-sided die), an opaque container, a hex playing sheet and miniature aircraft to play the game. When playing the campaign game, an additional 1d10 (a ten-sided die) is required.

1.13 The Hex Playing Sheet: The hex playing sheet should be compatible with the scale of aircraft being used. We recommend the hex map should be least 10 hexes by 10 hexes in size and divided into opposing trenchlines. The opposing trenchline should be

Example Hex Playing Sheet



between 5 and 10 hexes apart. A trenchline system can be between one and three hexes wide; hex playing sheets can vary from one another.

1.20 Players and Pilots

A person playing the game is a player; the personality controlling the aircraft is a pilot. Players may control more than one pilot in the game, although, this is only recommended for the more experienced players.

1.30 The Markers

There are 35 damage markers, 18 tailing markers, and 40 altitude markers (numbered 1 through 10).

1.301 Damage Markers: There are 35 damage markers, each with a blue and a red side. These markers are used to determine the damage an aircraft takes as a result of weapon fire. Most markers have a number and a section (fuselage, tail, wing or engine) printed on them. The number indicates the amount of damage boxes/triangles to be crossed off on the Aircraft Data Sheet, for that particular section. The markers should be placed in an opaque container for use during the game.

1.302 Information Markers: These are "Fire", "Smoke", "Spin", and "Being Tailed" markers. When an aircraft is on fire, issuing smoke, spinning, or being tailed, place the appropriate marker on the aircraft base stand.

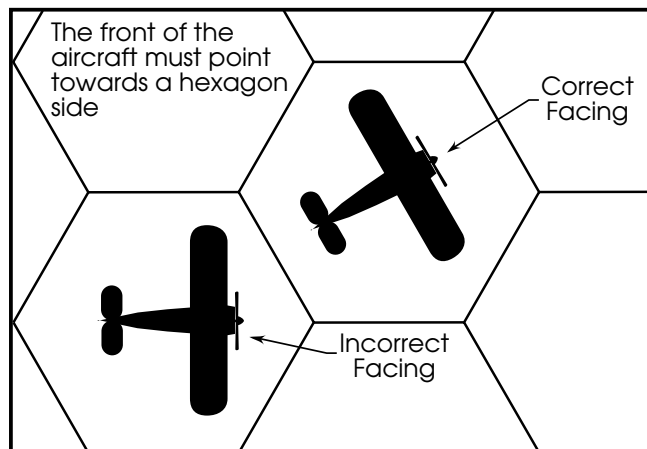
1.303 Altitude Markers: One altitude marker is placed on the aircraft base stand to indicate to all players the altitude level each aircraft is currently flying. If the aircraft dives or climbs, the player is required to replace the previous marker with one that has the correct current altitude indicated.

1.304 Tailing Markers: There are two sets of tailing markers: one set of markers have the word "Tailing" on one side, and are marked "L", "R" or "S" (Left, Right or Straight) on the other side. These are used to secretly disclose the direction of your next maneuver to any pilot who is tailing you. The other marker set is labeled "Changing Altitude" on one side, and are marked "Dive", "Level" or "Climb" on the other side. These are used to show planned altitude

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changes to any pilot who is tailing you.

Facing Diagram

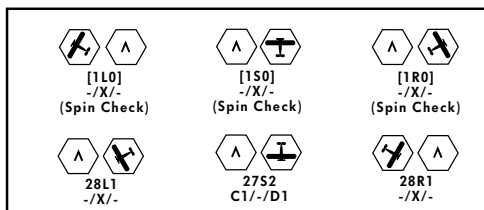


1.40 Hexagon Facing

During a game, each aircraft model must always be located in a particular hexagon with its front pointing towards one of the hexagon's six sides.

1.50 Maneuver Schedules

Each aircraft has its own Aircraft Data Sheet which contains a section, the "Maneuver Schedule", showing every maneuver that an aircraft can perform. The aircraft's starting position is noted by an arrow facing forward, and pointing to the top of the page. Its ending position is shown by a solid black aircraft silhouette. Some maneuvers require no forward hex movement or facing change, these maneuvers are noted in the Maneuver Schedule.



The above maneuvers require the aircraft to remain in the same hex; the aircraft's facing may change, but the aircraft does not leave its starting hex.

Below each maneuver are its Flight Tolerance Codes, which include the Maneuver code, and the Altitude Change Code.

1.501 Flight Tolerances: Flight Tolerances are the codes found directly under each maneuver diagram found on each aircraft's Maneuver Schedule. Flight Tolerances are divided into two categories:

- **Maneuver Codes:** These consist of the maneuver number, a direction letter ("L" for Left, "S" for straight, "R" for right) and a speed number. Each code describes in game terms the acceleration, and the types of maneuvers that an aircraft can perform.
- **Altitude Change Code:** The altitude change code informs players as how much their aircraft may dive, climb, whether it may fly level, or is required to change altitude in the next maneuver phase while performing that particular maneuver this game turn.

1.502 Early & Later War Charts: Players should note that aircraft are divided into early war and later war maneuver schedules. Games representing battles prior to January 1917, use the early war maneuver schedule. Games representing battles from January 1917 onward, use the late war maneuver schedule.

Note: Early War and Late War maneuver schedules cannot be combined or used in the same game.

2.00 Preparing to Play

2.10 Choose the Time Period

Players choose the year and the month their game will take place, keeping in mind that Canvas Eagles aircraft are divided into two general sections: "Early War" (1914-1916) and "Late War" (1917-1918). The time period will become very important because of the introduction of newer aircraft throughout the war will effect the number and type of aircraft available.

2.20 Choose Sides

Players must determine which side they will be fighting on, with their choices being either Allied or Central forces. Generally, it is preferable that both sides should be of equal strength with regards to the number of players in a game.

3.00 Sequence of Play

Canvas Eagles is played in turns. To make the game proceed in an orderly manner, the turn is divided into a sequence of phases. In each, phase, only very specific actions are possible. All players must finish one phase before starting the next phase.

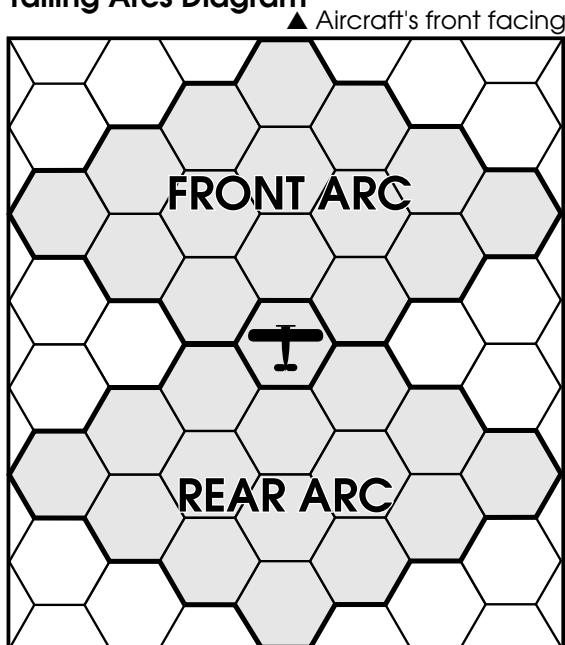
1. Tailing Phase
2. Maneuver Selection Phase
3. Fuel Expenditure Phase
4. Movement Phase
5. Combat Phase
6. Damage Phase
7. Recovery Phase
8. Problem Phase
9. Fire Damage Phase
10. Fire/Smoke Extinguishing Phase

3.10 Tailing Phase

Players determine if they are either being tailed or are tailing another player. For any two aircraft, one is tailing the other if the following two conditions apply:

- The aircraft being tailed is in the front tailing arc of the tailing aircraft.

Tailing Arcs Diagram



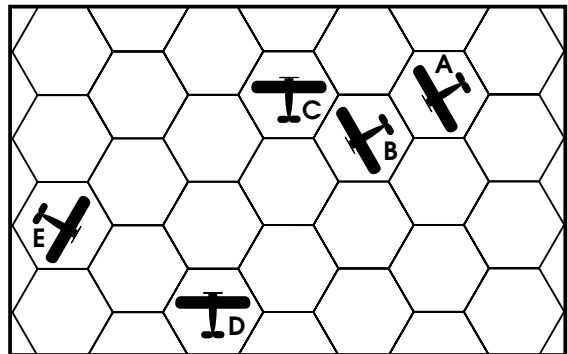
- The tailing aircraft is in the rear tailing arc of the aircraft being tailed.

Note: In the Tailing Arcs Diagram, the aircraft is technically occupying both the front and the rear arc. Which arc the aircraft actually occupies is determined in "3.103 Same Hex Tailing" and "3.502 Same Hex Combat".

3.101 Tailing Restrictions: The following restrictions apply to tailing:

- An aircraft can only tail one enemy aircraft at a time.
- An aircraft may tail any number friendly aircraft.
- An aircraft cannot be tailed if the hex range is greater than three hexes (special pilot skills can increase this to four hexes; see Appendix D), or, the altitude difference is greater than one level.
- An aircraft cannot tail if it is on fire or smoking.

Tailing Diagram



3.102 Tailing Diagram: The tailing diagram shows four examples of tailing: aircraft A may tail aircraft B; aircraft B, D and E may tail aircraft C (all aircraft are at the same altitude, or the difference is no greater than 1 altitude level).

3.103 Same Hex Tailing: An aircraft may tail another aircraft in the same hex only if following two conditions apply:

- Both aircraft are facing in the same direction.
- The tailing aircraft's maneuver from the previous turn had a lower speed number than that of the aircraft being tailed.

3.104 Effects of Tailing: During the maneuver selection phase, the players who are being tailed must

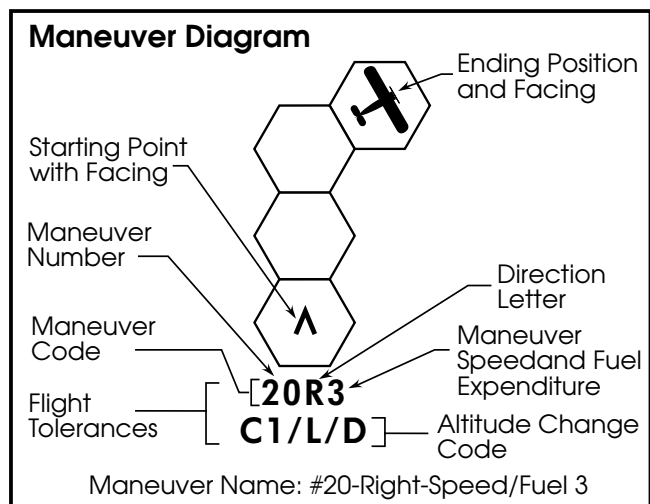
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reveal both the direction, and any altitude change of their chosen maneuver to each player tailing them. Each player being tailed selects a set of direction markers (one marked L for left, S for straight or R for right) and passes the correct one to the tailing player(s). Each player being tailed also selects an "altitude change" marker (one marked Dive, Level or Climb) and passes the correct one to the tailing player(s). The markers are kept secret from all other players.

3.105 Special Tailing Situations: It is possible to have a chain of aircraft tailing each other. In these cases, the first player in the chain gives directional information to the second player, who then decides on a maneuver and gives directional information to the third player, and so on to the end of the chain. It is possible to have a circular chain in which the leader, A, is tailing B, who is tailing C, who is tailing A. When situations like this arise, players each roll a 1d6 and the player with the lowest die roll must reveal directional information first.

3.20 Maneuver Selection Phase

Each player selects a maneuver from their aircraft's "Maneuver Schedule" and records this on their Aircraft Data Sheet. Some restrictions may apply to the maneuvers a player may choose.



3.201 Initial Maneuver: On the first turn, an aircraft may perform any *non-restricted* maneuver which appears on its maneuver chart.

3.202 Fuel and Maneuvers: The aircraft must have enough fuel left to perform the maneuver. The number of fuel boxes remaining on the Aircraft Data Sheet must be equal to, or more than, the speed number of the selected maneuver.

3.203 Restricted Maneuvers: Some maneuvers (numbered 27-36) may only be selected if the previous maneuver was a simple straight flight (maneuvers numbered 2, 3, or 4).

Example: if the previous maneuver was 28, the aircraft may not select maneuvers numbered 27 - 36.

3.204 Non-repeatable Maneuvers: Maneuver codes enclosed in brackets (maneuvers 1, 28, 31 and 36) are non-repeatable. These may not be chosen if the previous maneuver was also a non-repeatable maneuver.

Example: if the previous maneuver was 28, the aircraft may not select maneuvers 1, 28, 31 or 36.

3.205 Climbing Immelmann (29S2/27S2): The maneuver 29S2 or 27S2, in which the aircraft climbs 1 altitude level, is called a "Climbing Immelmann". This is only possible if the aircraft first performed a dive of more than 1 altitude level during the previous movement phase. (see "3.218 Zoom Climbing").

3.206 Acceleration and Deceleration: Players may only increase or decrease their aircraft's speed by one speed number per turn.

Example: If the previous maneuver had a speed number of 3, the player could not select a maneuver with a speed number of 1. The player could select a maneuver of speed 2, 3, or 4.

3.207 Turning: Aircraft with stability A and B cannot perform a left turn one turn, and a right turn on the following turn (or vice versa). These aircraft must perform a straight maneuver between direction changes. Stability "C" ignore this rule.

Example: An aircraft with Stability A or B performing a "14L2" maneuver one turn may not perform a "14R2" maneuver the next Maneuver Phase, although a Stability C aircraft may.

3.208 "Move Written" Markers: When players have completed their maneuver selection, they each must place a "Move Written" marker on their aircraft base stand. When all aircraft base stands on the game

board have a “Move Written” marker placed on them, then the “Maneuver Selection Phase” is over. In case of a disputed move, it is best to leave the marker in the aircraft’s starting hex with the correct starting facing during the maneuver phase. Remove the marker at the turn’s end, and place the “?” side up to indicate that the aircraft’s next maneuver selection has not yet been written.

3.21 Maneuvers and Altitude:

- Aircraft may not dive and climb in the same turn.

3.211 Flight Tolerances Codes: The Flight Tolerance codes are found beneath the maneuver diagram. Players can tell at a glance, how much their aircraft may dive, climb or if their aircraft may fly level for that turn (certain maneuvers may not permit or restrict an aircraft to flying level, climbing, diving, or may require an altitude change in the next *maneuver selection phase*). The following is a list of all the possible Flight Tolerance codes and their exact meanings:

C = While performing this maneuver, the aircraft may climb up to its maximum climb rating.

C1 = While performing this maneuver the aircraft may only climb a maximum of 1 altitude level.

D = While performing this maneuver the aircraft may dive to its maximum dive rating or more (see “3.215 Over Diving”).

D1 = While performing this maneuver, the aircraft may only dive a maximum of 1 altitude level.

L = While performing this maneuver, the aircraft may fly a normal level flight.

X = While performing this maneuver, the aircraft may fly a normal level flight, but on the next maneuver selection phase, this aircraft **MUST** dive at least 1 altitude level. Aircraft with “R” or “RR” weapons **MAY NOT** attack aircraft at higher altitudes while performing “X” maneuvers.

- = May not perform this action when performing this maneuver.

3.212 Initial Altitude: Aircraft begin the game at any altitude they are capable of flying, unless a scenario specifies the starting altitude. Consult the Aircraft’s Record Sheet to determine the maximum altitude that your aircraft may fly at during the game.

3.213 Diving: Aircraft may descend to a lower altitude level by diving. Diving consists of specifying “dive” in the “notes” box for that turn on the Aircraft Data Sheet. An aircraft which dives uses one less fuel box than its speed number indicates. This may mean that an aircraft will end up using “0” fuel for some maneuvers; a maneuver may never yield a negative speed number. An aircraft that dives 1 altitude level is said to have made a “Shallow Dive”; any dive greater than 1 altitude level is called a “Steep Dive”. Diving as a result of a spin does not reduce the fuel consumption for this maneuver; this maneuver still consumes 1 fuel box.

Example: An aircraft diving while performing a speed 2 maneuver will expend 1 fuel box after performing the maneuver.

3.214 Steep Dives: Aircraft diving more than 1 altitude level will be moving “1” speed number faster on the following turn. This means if an aircraft were performing a speed 2 maneuver and dives 2 or more altitude levels in a single maneuver phase, at the end of the maneuver this aircraft will be moving at speed 3. An aircraft cannot exceed its maximum speed as indicated on its Aircraft Maneuver Schedule. Such aircraft are considered to be already at their maximum speed.

3.215 Over Diving: An aircraft may attempt to dive more than its maximum dive rating. The maximum dive rating is the aircraft’s *safe* diving rate. For every extra altitude level the aircraft dives beyond its maximum dive rate, one BLUE damage marker is drawn at the end of the movement phase. All damage results are placed onto the aircraft’s wings regardless of the section mentioned on the damage marker. Ignore references to pilots, observers, rudders, weapons and smoke, but **do not ignore references to fabric tears and strut damage**. An aircraft may not over dive using maneuvers with a maximum dive rating of 1 (ie D1).

3.216 Climbing: Aircraft may ascend to a higher altitude level by climbing. Climbing consists of specifying “climb” in the “notes” box for that turn on the Aircraft Data Sheet. At the **END** of the maneuver phase, the aircraft will be at the higher altitude level. An aircraft may gain altitude levels equal to or less than its maximum climb rating. An aircraft that

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climbs 1 altitude level is said to have made a “Shallow Climb”; any climb greater than 1 altitude level is called a “Steep Climb”. An aircraft which climbs uses 1 fuel box more than its speed number indicates.

Example: Aircraft that climb while performing speed 1 maneuvers expend 2 fuel boxes after performing the maneuver.

3.217 Steep Climbs: Aircraft climbing 2 or more altitude levels in a single turn will be moving 1 speed number less at the end of movement phase.

Example: Aircraft that perform speed 2 maneuvers and climb 2 altitude levels in a single movement phase, will be moving at speed 1 at the end of the movement phase.

Aircraft ending the movement phase with a speed of “0” must test for spinning (see “3.81 Spinning”).

3.218 Zoom Climbing: An aircraft which dives 2 or more altitude levels during a movement phase may elect to “Zoom Climb” the following movement phase. A zoom climb allows an aircraft to climb with a fuel consumption of +0, rather than +1 for a normal climb. ONLY when Zoom Climbing may an aircraft perform a “climbing Immelmann” 29S2/27S2 during the following turn (see “3.204 Climbing Immelmann 29S2/27S2”).

3.219 Regaining Maximum Altitude: Most aircraft cannot regain their maximum altitude during the course of a game. Such aircraft can begin at their maximum altitude level, but once they have descended from this level, they may not regain them. Within the context of the game, ascending to these altitudes would take too long. Some aircraft have a “+” listed next to their maximum altitude on their Aircraft Data Sheets. These aircraft CAN regain their maximum altitude levels within the confines of the game.

Example: The Vickers F5B “Weapon Bus” has a maximum altitude listed as 5+. It can begin the game at altitude level 5, and can regain altitude level 5 once it has left it.

3.2191 Stalls: Aircraft which attempt to climb to an altitude level that it cannot reach will stall. An aircraft may voluntarily choose a stall maneuver if the player deems it appropriate. Aircraft which stall during a game, either voluntarily or involuntarily, must test to see if it goes into a spin (see “3.81 Spin-

ning”).

3.2192 Burst Fire Types and Altitude: Firing a short burst has no effect on the attacker’s maneuver for the following maneuver phase. However, when firing a medium or long burst with a rigid mounted weapon (noted as “R” or “RR” on Fire Arc templates) at an aircraft at a lower altitude, the attacking aircraft must dive next turn. When firing a medium or long burst at an aircraft at a higher altitude with a rigid mounted weapon, the attacking aircraft must climb next turn. If a higher altitude is unattainable the aircraft must choose a stall maneuver the following maneuver selection phase and check for going into a spin (see “3.81 Spinning”).

Note: When firing medium or long bursts with flexible mounted weapons, the aircraft does not have to dive or climb the following movement phase.

An aircraft performing a level flight maneuver with an “X” code for Flight Tolerance (*example: -/X/D1*) MAY NOT attack an aircraft which is at a higher altitude level.

3.2193 Anoxia: This rule is used for *Late War* games only. Aircraft operating at altitude levels 9 and 10 must test to see if crew members pass out from lack of oxygen. During the Problem Phase Roll 1d6. At altitude 9: The crew member passes out on a roll of 5 or 6. At altitude 10: The crew member passes out on a roll of 3, 4, 5 or 6. If the pilot has passed out, and their conscious crew members that can control the aircraft, the aircraft automatically goes into a spin (see “9.00 Dual Controls”; see “16.02 Oxygen”).

Note: Observers also have to test to see if they pass out; however, if an observer passes out, the aircraft will not go into a spin. Crew members who pass out may not fire, reload, or unjam their weapons. The crew member automatically recovers at altitude level 8, but a spinning aircraft must still recover from the spin (use normal spin recovery roll); (see “3.81 Spinning”).

3.2194 Collisions (optional): If two or more aircraft end the movement phase at the same altitude and in the same hex, there is a chance of a collision. Players roll 2d6, and if the sum of any of players roll are the same, their aircraft have collided. For determining damage, each player rolls 1d6 and take that many

“Red” damage markers (players do not receive experience points for collision red damage markers).

3.30 Fuel Expenditure Phase

Each player must cross off fuel boxes equal to the speed number of the maneuver performed. Fuel expenditure is effected by altitude changes (see “3.213 Diving” and “3.216 Climbing”). When the last fuel box is crossed off, the aircraft is *out of fuel* (see “3.301 Gliding”).

Note: Aircraft which are out of fuel are still able to catch fire, issue smoke, and have a fuel tank explosion.

3.301 Gliding: An aircraft that runs out of fuel, or whose engine has been destroyed by damage, must glide. Only aircraft which **MUST** glide are allowed to glide (players cannot stop their engines and glide in order to conserve fuel). Gliding aircraft can only select maneuvers 2, 3 or 8 during the maneuver phase. If maneuver 2 or 8 is selected, the aircraft must lose 1 altitude level every other turn. If maneuver 3 is selected, the aircraft must lose 1 altitude levels every turn (exception: aircraft that have a maximum dive rate of 1, only lose 1 altitude level per turn).

3.40 Movement Phase

During the movement phase players must move their aircraft as dictated by the maneuver they selected that turn. The Aircraft Maneuver Schedule for the specific aircraft shows the relationship between the aircraft’s starting position and ending position for each maneuver. The arrow is in the starting position and the solid black aircraft silhouette is in the ending position.

Example: In maneuver 12, an aircraft moves two hexes forward and one hex to the left.

In several maneuvers (maneuvers 1L, 1R, 27 and 28) the aircraft ends up in the same hex it started in, although it faces in a different direction. With maneuver #1, the aircraft does not change its facing nor does it move at all.

All movement is performed simultaneously. All players move their aircraft at the same time (or at least in the same phase). Any number of aircraft may occupy or pass through the same hex without colliding (see optional rule: “3.2194 Collisions”).

Note: During the Movement Phase aircraft that are currently spinning must drop one altitude band (see, “3.81 Spinning”).

3.401 Anti-Aircraft Fire: During the movement phase, aircraft that flew fly into or through a hex containing an anti-aircraft marker may be fired upon. Anti-aircraft fire is resolved as the last step of movement phase before continuing to the next phase.

3.50 Combat Phase

In the game, Canvas Eagles, all guns on board the aircraft are referred to as “Weapons”. This reference is used because not all weapons used on board aircraft were machine guns, but could also include rifles, carbines, 37mm cannons, 47mm cannons, 11.5mm machine guns, etc.

During the combat phase each weapon, providing it has a separate gunner, may fire at one aircraft in its line of fire, even if the selected target already is being attacked by one or more weapons. One weapon may make only one attack during a turn. It may fire at any one of several aircraft in the same target hex.

At the beginning of the combat phase, any pilot who wants to fire must secretly record on their Aircraft Data Sheet the target of their fire and the length of the burst: either a short, medium or long burst.

3.501 Line of Fire/Fire Range: Line of fire consists of the aircraft’s own hex and the three hexes from the aircraft (see “3.51 Fire Arc Template”).

3.502 Same Hex Combat: An aircraft may fire at a target aircraft in the same hex if following two conditions apply:

- Both aircraft are facing in the same direction (this also applies to observer’s aircraft).
- The speed number of the attacker’s maneuver performed in the maneuver phase is lower than the speed number of the target’s maneuver.

Note: The target aircraft is in the front arc of the attacking aircraft while the attacking aircraft is in the rear arc of the target aircraft. If the target survives the attack, it is now being tailed; (see , “3.103 Same Hex Tailing”).

During same hex combat, rear facing observers may not fire at attacking aircraft that are at the same alti-

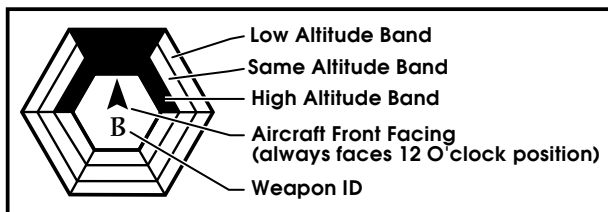
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tude level because the attacker is considered to be in their “Blind Spot”. However, observers may fire at attackers who are 1 altitude level higher.

3.504 Resolution: All fire is simultaneous. Damage does not take effect until the end of the damage phase. The actual resolution of each of the various combats may take place in any convenient order.

3.51 Fire Arc Template:

The Fire Arc template shows the hexes in which a weapon may fire. Each weapon, or weapon grouping (some weapons were grouped together, such as twin Spandau or twin Vickers Machine guns, etc), will have a corresponding Fire Arc template.



The Fire Arc template shows the Fire Arcs in a clock reference system for each weapon position. The blacked arcs show the hex facing where the weapon may fire. If an arc is shaded as opposed to being black, the player may fire into this arc, but if a medium or long burst is fired, the aircraft will have to dive (for a lower arc) or climb (for a higher arc) the following turn.

Note: Some aircraft have only one weapon, while other aircraft come with multiple weapons each with their own Fire Arc template. Some of these may be optional weapons which may mean players have a choice of weapons, or must roll 1d6, prior to the start of the game to determine if the aircraft is so equipped.

3.511 Clock Reference: A modified clock reference system is used to determine directions, based on the facing of the aircraft. Simply imagine a clock laid flat on the axis of the aircraft, with the 12 O'clock position being directly ahead of the aircraft, and the 6 O'clock position being directly behind the aircraft, etc. This system can be used to determine exactly which hexes fall in the various clock position with relation to the aircraft.

3.512 Fire Arc Altitude Bands: The Fire Arc templates show all firing arc positions and all altitudes within each arc for each weapon equipped on an aircraft. Firing directly up or down within the same hex is prohibited as this was never done in World War One air combat.

Low Altitude Band: The outer band on the Fire Arc template shows “Low” positions. To be low a target aircraft must ONE altitude level lower than the firing aircraft and in a different hex.

Same Altitude Band: The center band on the Fire Arc template shows “Same Altitude” positions. The target aircraft must occupy the same altitude as the firing aircraft.

High Altitude Band: The inner band on the Fire Arc template shows “High” positions. To be high, a target aircraft must ONE altitude level higher than the firing aircraft and in a different hex.

3.513 Fire Arc: The clock position and relative altitude information is put together to form “Fire Arcs” that define where weapons may fire. These arcs are identified by combining the clock reference with the altitude reference into terms such as “6 O'clock Low”, or “12 O'clock High”, etc.

3.514 Weapon Mountings: There are two weapon mounting classes (Rigid and Flexible) that affect Combat Values, and one sub-class (Wing Mounted) that does not affect Combat Values:

1. Rigid Mounted Weapons (R): These are weapons that are “fixed” or immovable and generally operated by the pilot. To aim these weapons, the pilot aims the whole aircraft. If the weapon is a twin rigid weapon, the code will appear as (RR).

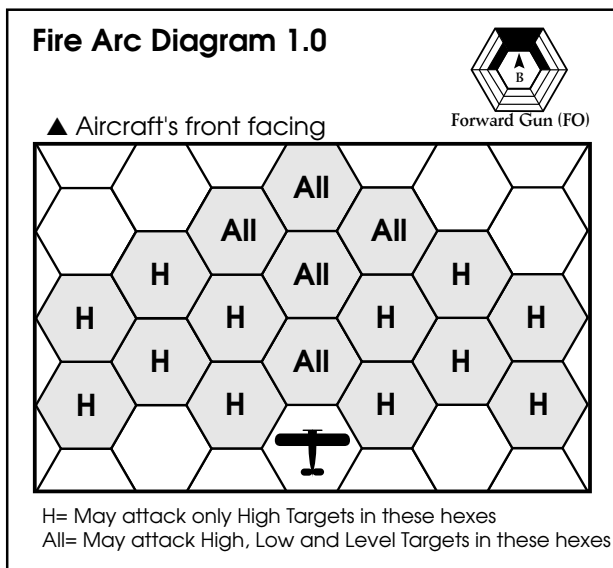
2. Flexible Weapons (F): These are weapons mounted on a swivel mounting that allows the weapon to swing through a horizontal arc. These are generally operated by the observer. Although they have a wider arc of fire, they are also less accurate than a rigid mounting system. If the weapon is a twin flexible weapon, the code will appear as (FF).

3. Wing Mounted Weapons (W): These are weapons which were placed on the tops of aircraft wings allowing the weapon to be fired over the arc of the propeller. Some weapons are a rigid mounted system operated by the pilot. These will have this

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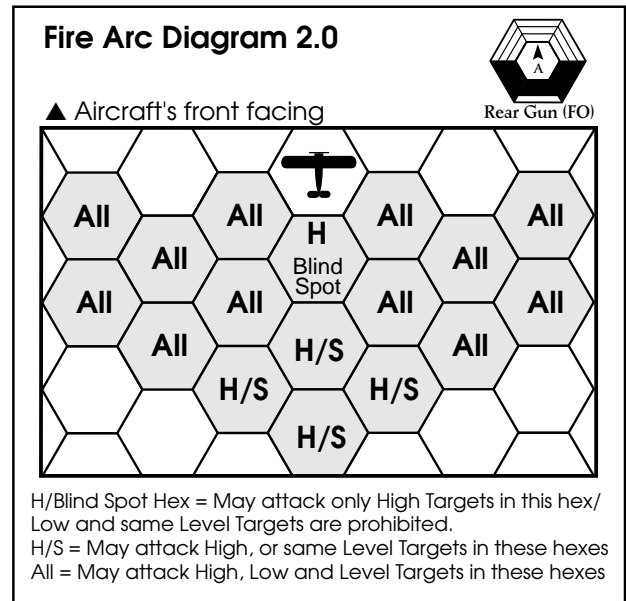
coding: RW (Rigid Wing Mounted Weapon). Other weapons are on a flexible mounted system, operated by the observer. These will have the code: FWO (Flexible, Wing Mounted, Observer operated). Wing mountings have no affect on Combat Value.

3.515 Fire Arc Diagram 1.0: Fire Arc Diagram 1.0 shows a forward facing, flexible mounted weapon operated by the observer (FO). The 12 O'clock position shows all three altitude bands are blackened and therefore this weapon may attack targets in the 12 O'clock hex row, one altitude higher, or lower, as well as attack targets that are on the same altitude



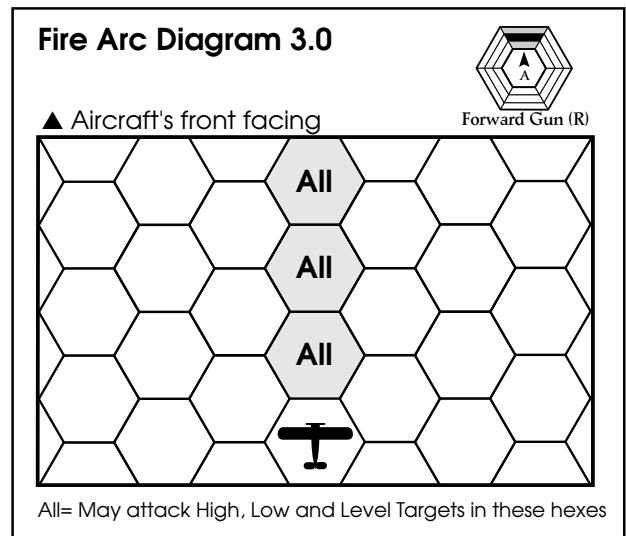
level. In diagram 1.0, these hexes are marked, "All". The same weapon may also attack targets that are one altitude higher in the 2 O'clock, and 10 O'clock position. These hexes are marked as, "H".

3.516 Fire Arc Diagram 2.0: Fire Arc Diagram 2.0 shows a rear facing, flexible mounted weapon operated by the observer (FO). The 4 O'clock and 8 O'clock positions shows that all three altitude bands are blackened and therefore this weapon may attack targets in both 4 O'clock and 8 O'clock positions, one altitude higher, or lower, as well as attack targets that are on the same altitude level. These hexes are marked as, "All". The same weapon may also attack targets that are one altitude higher and on the same altitude in the 6 O'clock position, but may not attack



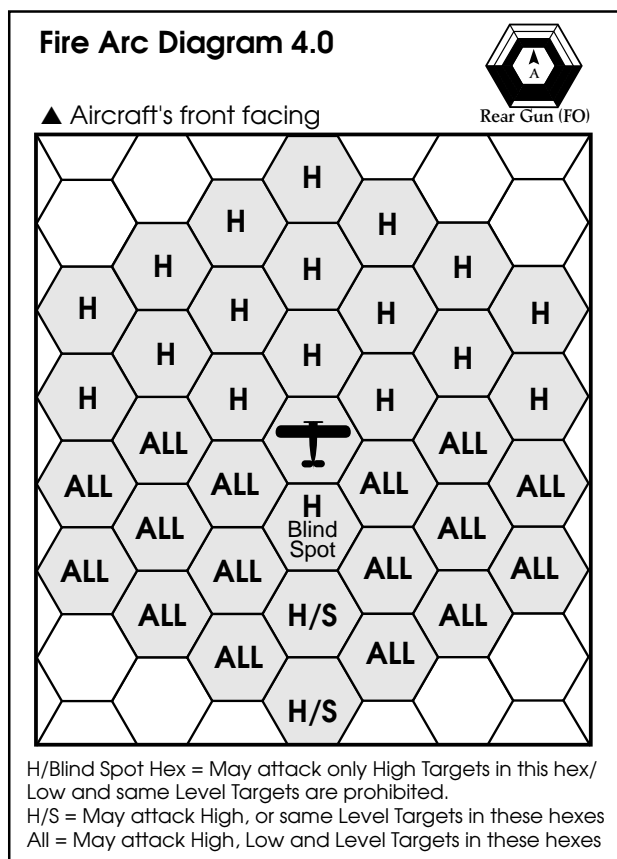
targets that are at a lower altitude along this hex line. These hexes are marked as, "H/S". The hex marked "H" is the "Blind Spot". Same altitude level attacks into the blind spot hex are blocked by the tail of the observer's aircraft (see "3.522 The Blind Spot").

3.517 Fire Arc Diagram 3.0: Fire Arc Diagram 3.0 shows a front facing, rigid mounted weapon operated by the pilot. The "R" indicates that the weapon is a rigid mounted system. This weapon can only fire along the 12 O'clock position and shows that the

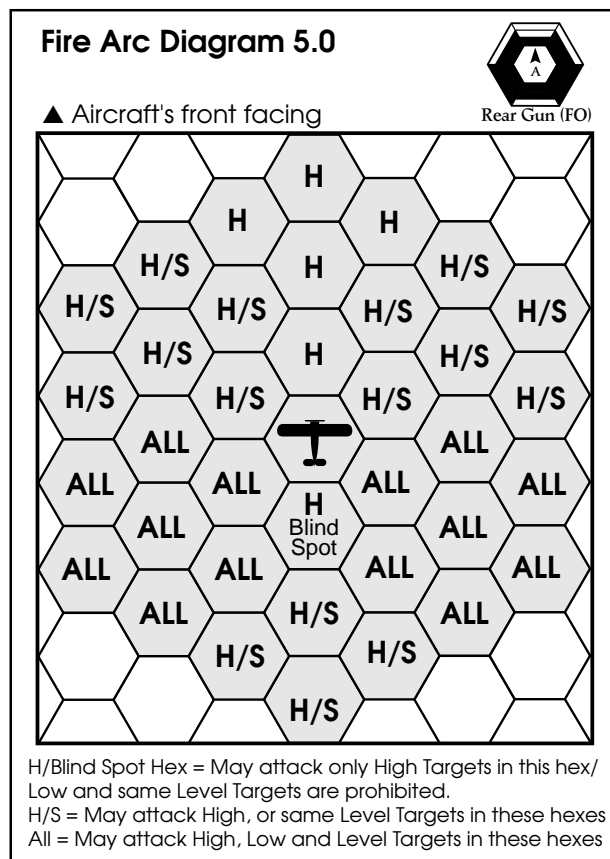


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level altitude band is blackened, while the high and low altitude bands are shaded. This means that this weapon is fixed to fire upon targets at the same altitude level, but may fire at targets at lower or higher altitude levels: if a long or medium burst is fired at a higher altitude target, the aircraft will have to climb during next movement phase. If it fires a long or medium burst at a lower target, the aircraft will have to dive during the following movement phase (see “3.2192 Burst Fire Types and Altitude”).

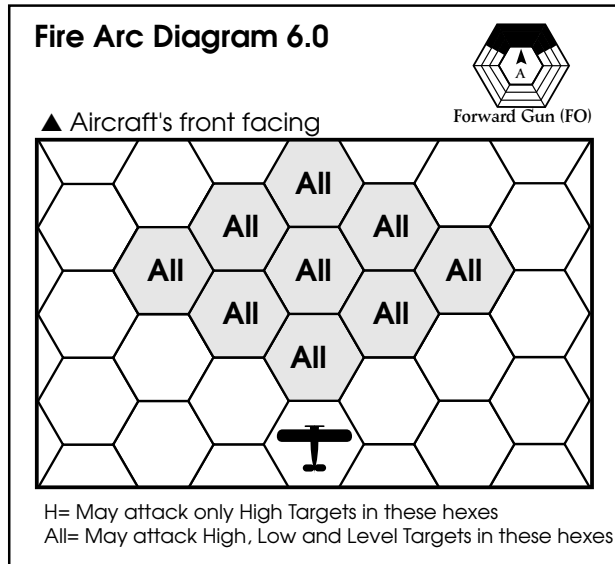


3.518 Fire Arc Diagram 4.0: Fire Arc Diagram 4.0 shows a typical Allied/Central Forces rear mounted weapon. The “FO” indicates that the weapon is a flexible observer operated system. This weapon has a complete 360° field of fire with some restrictions.



3.519 Fire Arc Diagram 5.0: Fire Arc Diagram 5.0 shows a rear mounted weapon found on the Roland C-II aircraft (Central Powers). The “FO” indicates that the weapon is a flexible observer operated system. This weapon has a complete 360° field of fire.

3.5191 Fire Arc Diagram 6.0: Fire Arc Diagram 6.0 shows a forward mounted weapon found on the SPAD A2 aircraft (Allied). The “FO” indicates that the weapon is a flexible observer operated system. This weapon only has a partial arc of fire to the front.



3.5192 Weapon ID and Ammunition: A few aircraft are equipped with multiple weapons that require keeping track of ammunition (ie two or more Lewis Guns). These are noted on the “Aircraft Data Sheet”. Since it is assumed that all weapons start the game loaded, a weapon ID, corresponding to the weapon ID found on the Fire Arc Template, will appear next to the ammunition drum to indicate to players which ammunition drum is loaded into which weapon.

3.52 Observers and Combat:

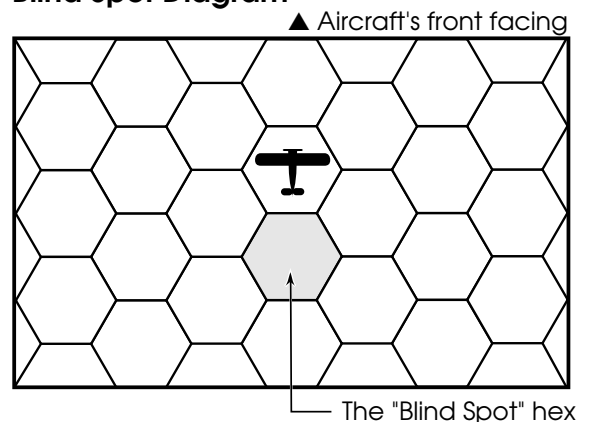
All reconnaissance and bombing aircraft have two or more crew positions and the additional crew member(s) are called observers. The observer’s field of fire can be different from the pilot’s field of fire as most observers were equipped with a flexible weapon (see the “Fire Arc template” for each aircraft).

3.521 Firing Rules for Observers:

- Observers may only fire, unjam or reload their weapon(s) if their aircraft performed a non-restricted straight maneuver, or a simple left or right turn (maneuver #8, 14 or 20).

- Observers may not fire while their aircraft is spinning.
- Observers may fire at a different target than the pilot and may fire a different length burst.
- Observers never receive a modifier for tailing.
- Observers may receive a modifier for firing at the same target as the previous turn providing he was the one who fired.
- Observers receive the modifier for deflection unless he is firing at a target that is facing directly towards or directly away from his aircraft (ie the observer’s aircraft is in the targets 12 O’clock or 6 O’clock position).
- Observers may fire at a target even if their aircraft is issuing smoke or on fire.
- Observers may fire during same hex combat, with restrictions (see “3.502 Same Hex Combat”).

Blind Spot Diagram



3.522 The Blind Spot: The first hex directly behind an aircraft is called, “The Blind Spot”. Observers may not normally fire at targets in the “Blind Spot” because their aircraft’s tail assemblage interferes with their arc of fire. However, the observer may fire into the “Blind Spot” if:

- 1) Their aircraft performed a level or a dive maneuver. In these cases, the observer may only fire at targets in the Blind Spot that are 1 altitude level higher.
- 2) Their aircraft performed a climb maneuver. In this case, the observer may fire at targets in the Blind Spot that are at the same altitude level, or 1 altitude level higher.

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3.53 The Combat Values Table:

1) The attacker finds the column of the Combat Values Table on the Combat Chart that corresponds to the range. Players count the number of hexes between the firing aircraft and the target aircraft. The number of hexes plus the hex containing the target is the "hex range". The first number shown is the "Base Value". Make a note of this number.

2) Examine the list of modifiers, and note applicable ones along with their value. Some values have a plus sign and are added to the base value, while others have a minus sign and are subtracted from the base value. Use ALL modifiers that apply.

3) The cumulative total of the base value and all the applicable modifiers is the combat value. The Combat Value is used on the Combat Result Table.

Note: If the cumulative total is zero, or less, then the attack has no effect. Although, the attacker has still fired, used ammunition, and the weapon may jam.

3.531 Burst Lengths: Add the value for each length of burst fired. Medium bursts and long bursts can increase the combat value. Use the plotted burst type recorded on the Aircraft Data Sheet.

3.532 Stability: Use the stability level of the attacking aircraft to determine the modifier. Stability Level A is the best; Stability Level C is the worst.

3.533 Target Stalled: If the target aircraft performed a stall maneuver (1L, 1R or 1S) this turn, apply this modifier.

3.534 Attacker Speed 3 or 4: High speed reduces the accuracy of an aircraft's weapon fire. Apply this modifier if the attacker's speed was 3 or 4.

3.535 Firing Flexible Weapons (F): If the attacker is using a flexible weapon as per the Aircraft Data Chart, apply this modifier.

3.536 Restricted/Spin Maneuver: If the attacking aircraft performed a restricted maneuver this turn, or recovered from a spin the previous turn, apply this modifier.

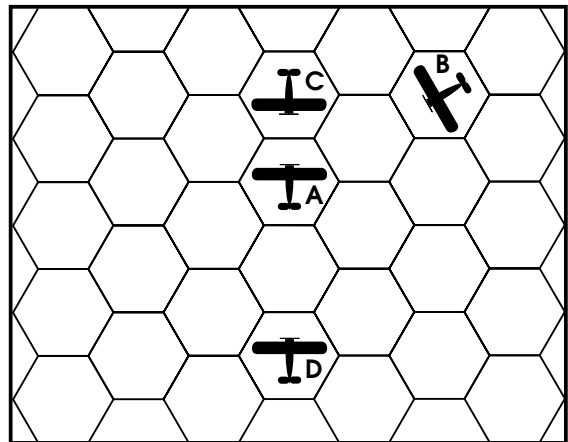
3.537 Firing with Dual Weapons: Use this modifier if the attacker is firing twin weapons.

3.538 Firing with Single Weapon: Use this modifier if the attacker is firing only one weapons.

3.539 Deflection: Attacks on targets from any angle other than from directly in front, or from directly behind, will have the deflection modifier applied.

Example: In the Deflection Diagram, aircraft A is the target. Aircraft B is firing with deflection (and includes a -2 modifier on its combat value computation). Aircraft C and aircraft D are not firing with deflection.

Deflection Diagram



3.5391 Fired at last turn: If attacker fired at the same target as last turn (even if the final combat value from the previous turn was zero or less), apply this modifier.

3.5392 Tailing a Target: If the attacker was tailing the target during this turn's tailing phase, apply this modifier.

3.5393 Target at a lower altitude: If the attacker is at a higher altitude than the target, apply this modifier.

3.5394 Target at a higher altitude: If the attacker is at a lower altitude than the target, apply this modifier.

3.5395 Firer has a Minor Wound: If firer has a minor wound, apply this modifier.

3.5396 Firer has a Serious Wound: If firer has a serious wound, apply this modifier.

3.54 Combat Die Roll:

Roll 1d6 and find the intersection of the die roll and the combat value on the Combat Result Table: the table gives the number of "BLUE" and the number of "Red" hits suffered by the target. Note the combat results.

Example: If the combat value (after modifications) is 11 and the die roll result is 5, the combat result is B3R the target has received one BLUE hit and three RED hits.

3.541 Drawing/Recording Damage: There are 35 damage markers in the game. On each marker there is a blue side and a red side. These markers are drawn by the target player from an opaque container. Multiple attacks upon different targets are resolved in any convenient order that the players wish. All attacks are deemed to be simultaneous. If there is more than one attacker firing at a single target during the same turn, then all attacks on that target must be drawn for at the same time. If the Combat Result Table indicates that any RED damage markers are received then, the target player draws all the RED damage markers first. The effects are then recorded on the Aircraft Data Sheet. Then, any BLUE damage markers are drawn and recorded, the markers are returned to the container. Any other attacks on different targets in the same turn are then drawn.

*Note: When conducting "Fighter Sweeps or a Scramble" (see Appendix E), attackers should record the **number** of RED damage markers that they caused on enemy targets as these are worth extra experience points.*

3.60 Damage Phase

Damage recorded in the combat phase takes effect during the damage phase. That is to say, an aircraft destroyed during the combat phase can still fire at a target in the same combat phase. Most damage results will be hits marked off on the Aircraft Data Sheet.

Example: A damage marker that states, "4 Wing Hits" instructs a player to mark off four boxes on the wing section of the Aircraft Data Sheet.

3.601 Total Wing, Tail or Fuselage Damage: When ALL of an aircraft's wing, fuselage or tail boxes are marked off, the aircraft has been destroyed.

3.602 Total Engine Damage: When all of an aircraft's engine or fuel boxes are marked off, it no longer has power and must glide from that point on (see "3.301 Gliding").

3.603 RED Marker Tail and Wing Damage: Aircraft must test for spins when ever they receive RED marker damage from the combat phase, in tail or wing sections (see "3.811 Testing for Spins").

3.604 Critical Damage (optional): When all the damage boxes have been crossed off an aircraft section, and at least one triangle damage is crossed off, the aircraft is said to have suffered critical damage.

- Wings, Tail, Fuselage: Aircraft performing restricted maneuvers with a critically damaged section must roll 1d6: 1, 2, 3 or 4 = No Effect; if a 5 or a 6 is rolled, the aircraft section has broken apart and the aircraft is destroyed.
- Engine: Aircraft performing restricted maneuvers with critically damaged engines must roll 1d6: 1, 2, 3 or 4 = No Effect; if a 5 or a 6 is rolled, the engine has been destroyed/seized. Roll an additional 1d6: 1, 2, 3 or 4 = No Effect; 5 = Engine Issues Smoke; 6 = Engine is on fire.

*Note: Die roll is made for **each** critically damaged section on the aircraft.*

3.605 Multiple Marker Effects: When two or more damage markers are drawn that appear to mutually exclude the effects of one over the other, it is the MOST severe penalty that is used. Note which marker requires the longest turn wait before recovery, or the marker that causes the most damage - it is that marker that will be in effect. If there is no difference, then the marker that was drawn first will be in effect. When multiple markers are drawn with "Rudder Jammed" results that have conflicting directions (Left, Right or Straight) then it is the first drawn marker that is in effect. However, ALL damage printed on the all "Rudder Jammed" markers are to be recorded.

3.606 Same Altitude Front and Rear Hits: If a target and it's attacker are both at the same altitude:

Tractor Aircraft: All attacks from directly in front that result in tail hits instead become engine hits; all attacks from directly to the rear that result in engine hits, will instead become tail hits.

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Pusher Aircraft: All attacks from directly in front that result in tail hits instead become fuselage hits; all attacks from directly to the rear can yield any type of hit.

3.607 Special Damage Types: In addition to marking off boxes, other damage types are also possible:

- **Fuel Tank Hit: Lose 6 Fuel.** The player IMMEDIATELY marks off 6 fuel boxes from the aircraft's fuel. If no fuel remains, the aircraft must glide starting the next turn (see "3.301 Gliding").
- **Engine Damaged: No speed 3 or 4 maneuvers.** If the aircraft's current speed is 3 or 4, the following turn, it must be reduced to a speed 2 maneuver.
- **Rudder Jammed: Must do LEFT/RIGHT/STRAIGHT maneuvers for the next 2 turns.** The player must choose any maneuver that is found in the appropriate maneuver schedule column, and may choose different maneuvers for each turn the rudder is jammed, providing the maneuvers are from the same maneuver schedule column. Multi-engine aircraft still have to make a straight maneuver between the two turns; these straight maneuvers must either be a simple straight, or must have a hex facing change in the direction of the rudder jam.

Example: If the rudder of a multi-engine aircraft is jammed left, it may not choose straight maneuvers 7S1, 13S2, 19S3 or 26S4.

- **Fabric Tears: No restricted maneuvers.** The aircraft may not perform restricted maneuvers for the remainder of the game.
- **Fabric Tears: No speed 3 or 4 maneuvers.** If the aircraft's current speed is 3 or 4, the following turn, it must be reduced to a speed 2 maneuver.
- **Struts Damaged: No restricted maneuvers.** The aircraft may not perform restricted maneuvers for the remainder of the game.
- **One Weapon Destroyed.** Players may have to roll 1d6 to determine which gun is destroyed if there is more than one weapon on the aircraft.
- **Pilot Killed.** Unless the aircraft is equipped with dual controls (and a living observer), or two pilots (one still living) aircraft goes into a spin. The aircraft will be destroyed once it reaches "0" altitude level.
- **Fuel Tank Hit: Explode.** Aircraft is destroyed.

Fuel tanks can explode even if there are no remaining fuel boxes.

- **Pilot Wound? Must do a slower maneuver next turn.** Only check the pilot for a wound. Regardless if pilot is wounded or not, next maneuver selection phase, the player must choose a maneuver that is one speed box less than this turns maneuver; the slowest possible maneuver is a stall maneuver (1L0, 1S0 or 1R0).
- **Pilot Wound? Must do straight maneuver next turn.** Only check the pilot for a wound. Regardless if pilot is wounded or not, next maneuver selection phase, the player must choose a STRAIGHT maneuver.
- **Observer Killed.** The observer or one of the observers/gunners in a multi-crewed aircraft are removed from game play for the remainder of the game.
- **Observer Wound? May not fire for 3 Turns.** Only check the observer for a wound. Regardless if observer is wounded or not, he may not operate his weapon(s) for three turns. On the fourth turn he may fire his weapon again.
- **Crew Wound?** This symbol indicates a chance for the pilot and/or observer to receive a wound. Roll a die for ALL crew members in the aircraft. Roll 1d6: 1, 2 or 3 = No Effect; 4 or 5 = Light Wound; 6 = Serious Wound.

3.608 Spinning Aircraft: An aircraft in a spin during the Movement Phase MUST reduce its altitude by 1 level. It may not select another maneuver, but rather its player marks **0S1** on the Aircraft Data Sheet for the next turn; this maneuver consumes 1 fuel box for the turn. Spinning aircraft that have dropped to altitude "0" have crashed.

Note that the altitude loss due to a spin does not reduce fuel consumption.

3.70 Recovery Phase

During the recovery phase, a pilot may attempt ONE of the following: unjam a weapon, attempt to recover from a spin, or reload a weapon.

3.701 Unjamming Weapons: For a pilot to unjam a weapon, the aircraft must have performed a simple straight maneuver, #2, 3, or 4; no diving/climbing is

permitted. For an observers to unjam a weapon the aircraft must have performed an unrestricted straight maneuver, or maneuvers 8, 14, & 20 (simple left or right); observer may attempt to unjam a weapon while the aircraft is performing shallow dives or climbs. Weapons are unjammed on a roll of a 4, 5 or 6 and may be used normally the following turn.

3.702 Spin Recovery: To recover from a spin, the pilot must Roll 2d6:

Aircraft recovers from a spin on a roll of 7, 8, 9, 10, 11 or 12.

Modifiers to die roll: Stability A +1; Stability B +0; Stability C -1; Novice Pilots/Observers -1

Note: A novice is a pilot with less than 50 experience points (see "13.101 Novice Pilots").

When the aircraft recovers from the spin, number the hexsides that the aircraft now occupies from 1 to 6 (make the aircraft's original hex facing "1" and then moving clock-wise, the next hexside will be "2", etc.) and then roll 1d6. Face the aircraft toward the hexside equal to the die roll. On the next movement phase, the aircraft must perform a maneuver with a speed number equal to the highest speed number the aircraft is capable of performing.

Exception: Aircraft which only have ONE maximum speed maneuver may choose this maximum speed maneuver or a maneuver that is ONE less than maximum.

3.703 Reloading a Weapon: Pilots may reload a weapon providing the aircraft performs a simple straight maneuver (2S, 3S or 4S); no diving/climbing is permitted. Observers may reload a weapon providing the aircraft performed a non-restricted straight maneuver, or a simple left or right turn (maneuver #8, 14 or 20); observer may attempt to reload while the aircraft is performing a shallow dive or climb.

3.80 Problem Phase

3.801 Weapon Jamming: Players who fire long bursts must test their weapons for the possibility of jamming. Roll 1d6 and if a 5 or 6 is rolled, the weapon has jammed (see "3.701 Unjamming Weapons").

3.81 Spinning:

The spin maneuver is shown on the Aircraft Maneuver Schedule (the box labeled, "Spin"). Select this maneuver if the aircraft is spinning. Aircraft pilots may voluntarily choose a spin maneuver providing the pilot has the experience ability (see Appendix D). Spins may be a result of a stall, RED damage marker in the tail or wing, or may be chosen by the pilot if he has the skill (see Appendix "D", The Special Abilities Table).

3.811 Testing for Spins: Only one spin roll is made during the Problem Phase, regardless of the number of reasons to check. Roll 2d6 to test if an aircraft goes into a spin:

The aircraft spins on a roll of 2, 3, 4 or 5.

Modifiers to die roll: Stability A +1; Stability B +0; Stability C -1; Novice Pilots/Observers -1

Note: A novice is a pilot with less than 50 experience points (see "13.101 Novice Pilots").

All spinning aircraft drop down one altitude level during the Movement Phase. On the "Aircraft Data Sheet", spinning aircraft mark their turn's maneuver as **0S1**, and the aircraft model is placed into a "nose down" position. Aircraft automatically spin if it's pilot is killed or passes out (see "3.2193 Anoxia").

3.812 Effects of a Spin: Pilots and observers may not fire their weapons while their aircraft is spinning.

3.90 Fire Damage Phase

3.901 Fire Damage: Players whose aircraft have caught fire must draw one BLUE marker and record the damage; damage is applied immediately.

3.100 Fire/Smoke Extinguishing Phase

Players whose aircraft are on fire or smoking may attempt to extinguish the fire or smoke.

3.1001 Fire Extinguishing: Roll 1d6, and on a roll of a 5 or 6 the fire goes out; remove the fire marker and replaced it with a Smoke marker. If the aircraft performed a sideslip (maneuver #8, 16 or 17), the fire is out on a 1d6 roll of 4, 5 or 6.

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3.1002 Smoke Extinguishing: Roll 1d6, and on a roll of a 6, the smoke is extinguished; remove the smoke marker. However, if a 1 is rolled, the smoke becomes a fire; place a fire marker on the aircraft.

Note: The smoke extinguishing die roll cannot be modified by performing a sideslip; aircraft that catch fire during the Smoke Extinguishing Phase do not take damage until following Fire Phase.

4.00 Secrecy

Players are required to keep several things secret from other players - including players from their own side.

- Players should NOT tell ahead of time the maneuver their aircraft is to perform. The direction of the maneuver and changes in altitude is disclosed only to those players who are *tailing*.
- Players should NOT tell ahead of time what target they intend to shoot at, or what type of burst will be fired. It must, however, be written down on the Aircraft Data Sheet. This is then declared "out loud" before the Combat Die roll is made.
- Players should NOT tell when their pilot or observer has been killed, even if the resulting death puts their aircraft into a spin.
- Players should NOT tell the degree or type of damage their aircraft has taken, except the following: smoke, fire, spins, or the destruction of an aircraft. These are announced when they happen because they would be obvious to an enemy pilot/observer.
- Players should NOT tell when their weapons have jammed, or when ammunition is depleted.
- Players should NOT tell that their aircraft is gliding.
- Players may NOT jointly plan their maneuvers, as aircraft did not have radios. Once in the air, pilots are on their own.

5.00 Ending a Game

5.01 Escape: Eventually, a pilot may wish to leave

combat and head back to the aerodrome. Escapes may be prompted by low fuel, severe damage, etc.

- A pilot escapes when his aircraft flies off the edge of the game board behind the starting line for his side.
- A pilot escapes if his aircraft has landed safely in friendly territory, or if it has landed in enemy territory, where the pilot successfully returned to his airdrome (see "11.0 Landing/Crashing").

5.02 Capture: A pilot who has landed in enemy territory and has not returned to a friendly territory is captured (see "11.03 Evading Capture").

5.03 Destroyed: An aircraft is "destroyed" when ALL of the damage boxes and triangles in any of the wing, fuselage or tail sections are all marked off or its pilot is killed (exception: 9.00 Dual Controls & 12.00 Multiple Engines).

6.00 The Weapons

There were many different types of weapons used in aerial combat during the First World War, but within the scope of this game, only six of the most commonly used weapons are dealt with in any detail.

Weapon Types

Weapon	Drums	Ammo
Carbine/Rifle	-	Unlimited
Lewis Gun (pre-June '16)	x4	3
Lewis Gun (as of June '16)	x4	5
Hotchkiss MG 25-round strip mag	x8	2
Hotchkiss MG 50-round drum mag	x6	3
Central Forces Light MG	x2	10
Vickers MG/Spandau MG	-	Unlimited
37mm/47mm Cannon	-	8

6.01 Carbines/Rifles: These were the first *unofficial* weapons used by both pilots and observers during the first eighteen months of the war. The number of aircraft shot or forced down by carbine, shotgun, and

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rifle fire is quite surprising. These weapons are rather ineffective in gaming terms, but players are welcome to reenact a 1914 air battle if they wish. Carbines/rifles may only fire short bursts, are considered to be flexible (F) weapons, and have an unlimited supply of ammunition. Regardless of the damage indicated on the Damage Markers, Carbines/Rifles only inflict "1" point of damage to any section hit during combat; however, all other damage, such as Strut Damaged, Fabric Tears, Pilot Killed, are still possible. Players will have to determine the Fire Arc template by aircraft type themselves, or may use the "General Fire Arc templates".

General Carbines/Rifles Gun Play Templates



Rear Gun (FO)



Front Gun (F)

Note: Gun Play can vary by aircraft type

6.02 The Lewis Gun: The Lewis Gun was the standard light MG used by most allies two-seater aircraft, and many of the early war single seater fighters. This weapon used a drum magazine that must be changed frequently in combat. Consequently, players who use the Lewis Gun, must keep track of their ammunition expenditure. The Lewis Gun normally comes with five boxes of ammunition. Mark off 1 box for a short burst, 2 boxes for a medium burst, and 3 boxes for a long burst.

Optional: Players may want to use the historical ammunition capacity for the Lewis Gun. There were two types of Lewis Gun ammunition drums manufactured during First World War. The original drum magazine held 47 rounds of ammunition, while the later model (introduced late June 1916) held 97 rounds of ammunition. Therefore, before July 1916, the Lewis Gun drum magazine contains only 3 boxes of ammunition, while after this date, the Lewis Gun drum magazine contains 5 boxes of ammunition.

6.03 Combined Lewis & Vickers MGs: Aircraft mounting both a Lewis Gun and a Vickers Machine gun (the Nieuport 17 and the SE5a, among others), both weapons must be fired at the same time and fire the same burst type, but are checked for jamming and unjamming separately. If one gun is jammed, the

other may still fire. If the Lewis Gun has only a short or medium burst remaining, it may be combined with a long burst from the Vickers MG and counts as a medium burst from dual weapons.

6.04 Central Forces Light MG's: The Central Forces used a variety of light MG's during the First World War (including a large number of captured Lewis Guns). For game purposes these have been merged into one basic weapon type. This weapon uses a drum magazine that must be changed frequently in combat. Consequently, players who use this weapon, must keep track of their ammunition expenditure. The drum magazine for this weapon holds 200 rounds of ammunition, that translates into 10 ammunition boxes. Each weapon comes with 2 drum magazines. Mark off 1 box for a short burst, 2 boxes for a medium burst, and 3 boxes for a long burst.

6.05 The Hotchkiss Machine gun: The Hotchkiss MG was used by both the French and British forces in small numbers up to mid-1916. At first the weapon employed a 25-round strip magazine that did not give the gunner the benefit of a "long burst" of fire. Late in 1915, a 50-round drum magazine was issued. The drum magazine seems to have only been used by observers rather than pilots as it may have been difficult for the pilot to fly the aircraft and reload the drum magazine at the same time. In the game, the 25-round strip magazine has only 2 ammunition boxes. Each machine gun comes with eight, 25-round strip magazines; if the 50-round drum magazine is used, the weapon receives 4 drum magazines, with 3 ammunition boxes each.

6.06 Belt-Fed Machine guns:

The Vickers Machine gun: This is the standard belt-fed machine gun for virtually all Allied aircraft, although other weapons were also used.

The Spandau Machine gun: This is the standard belt-fed machine gun used by almost all Central aircraft.

Ammunition Limit (optional): The game does not require players to keep track of ammunition expenditure for belt-fed, rigid mounted, machine guns. However, players may use a limit of 20 ammunition boxes for all belt-fed machine guns.

World War I Air Combat

6.07 Onboard Cannons (optional): A few aircraft were armed with cannons during the first World War. Cannons were not very effective. They were heavy, slow to reload, created toxic fumes which caused nausea for the crew, and were not very accurate. Only a few French aces seemed to have had any real success with the weapon although a single hit often caused enemy aircraft to be blown to bits. Some of these were: a variant of the Voison, which was equipped with a forward firing 47mm cannon, in place of its observer, and a variant of the SPAD 7 and the SPAD 12 which both had a 37mm Cannon mounted to fire through the propellor shaft (the SPAD 12 was virtually identical to the SPAD 13). Fighter aircraft armed with 37mm cannons usually had a single belt fed Vickers Machine gun with which to aim the cannon. The pilot would fire the machine gun and when hits were observed would then fire the cannon. The cannon was a single shot weapon that had to be reloaded between shots (treat the same as replacing an ammo drum). There are two methods of firing the cannon in the game:

1) Free Firing: Very inaccurate. When a target is within the attacker's range and fire arc, the pilot may fire the weapon using the "Free Fire" penalties (needless to say, it wasn't easy to hit a target with a single shot). When firing, the cannon can ONLY fire a short burst. If any damage has occurred then a hit has resulted -- ignore this damage and move up to column 13. Roll an additional 1d6 on the 13 column to determine the damage to the target aircraft.

FREE FIRE PENALTIES

RANGES:	<u>3</u>	<u>2</u>	<u>1</u>	<u>0</u>
	P	-6	-6	-6

2) Aimed Fire: Fairly accurate. The pilot first fires his single machine gun and if a hit is obtained upon the target, and depending upon the type of hit, the player then rolls an additional 1d6 to determine if the cannon has ALSO hit the tar-

HIT TYPE:	<u>B</u>	<u>R/B-R</u>	<u>2R/B-2R</u>	<u>3R+</u>
	+0	+1	+2	+3

get. If the sum of the die roll, plus the below modifiers results is 6, or greater, the target has been hit. The cannon hit will shift the damage table up by additional 8 columns.

Example: A player announces that he is firing his single machine gun at an enemy aircraft on column 8. A "5" is rolled, which yeilds a single blue and a single red hit. The player then announces that he will now attempt to fire his cannon at the same target aircraft. A 1d6 is rolled, a 5 results, +1 is added to the die roll, to make it a result of 6. This means that the cannon has also hit the target aircraft. The fire result table is shifted up by 8 columns to the 16 column. An additional die roll is made on the 16 column to access the combined cannon and machinegun damage.

6.08 Heavy Machinegun (optional): A few aircraft, mainly the SPAD 13, were equipped with a single heavy 11.5mm machinegun. These were generally used for ballon busting missions. Add +3 to the Combat Value when firing.

6.09 Le Prieur Anti-Balloon Rockets (optional): Some allied aircraft were equipped with the le Prieur anti-balloon rockets. The maximum range of a rocket is one hex, and all firing is conducted on the "1" column on the Combat Table. The rocket bearing aircraft only has enough rockets for one attack. Any hits scored will destroy the balloon. Rockets may not be used against enemy aircraft, ground or naval targets. Aircraft which may use rockets are noted on the maneuver charts.

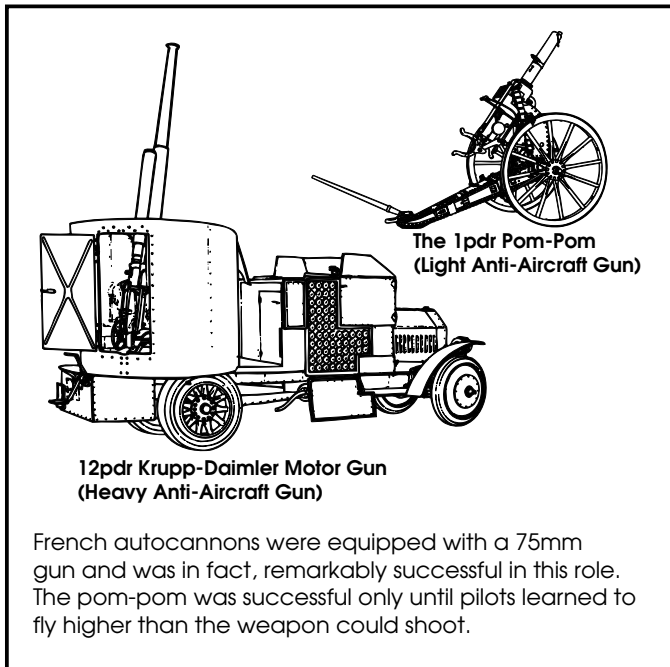
7.00 Archie (optional)

All anti-aircraft fire occurs at the end of the movement phase (see "3.401 Anti-Aircraft Fire"). There are three types of anti-aircraft fire:

- 1) Ground fire from trenchlines hexes
- 2) Light Anti-Aircraft Fire from designated units
- 3) Heavy Anti-Aircraft Fire from designated units

7.01 Ground Fire: An aircraft may be fired upon by ground fire if the aircraft flew into or through an enemy trenchline hex at altitude level 1 or 2; roll 1d6 for each hex flown into or through. Use column 2, on

Canvas Eagles 1914 - 1918



the “Combat Result Table”. Ground fire may not fire at aircraft leaving a trenchline hex, only those aircraft that have flown through or ended their movement phase over a trenchline hex.

7.02 Anti-Aircraft Markers: Roll 1d6 at the start of each game to determine the number of anti-aircraft markers a side receives. Each battery or concentration of anti-aircraft units is represented by a single “Anti-Aircraft Marker”. For games involving two or more hex playing sheets, players may want to double the number of Anti-Aircraft markers used per side.

- 1: None
- 2-3: x1 light anti-aircraft marker
- 4-5: x1 light and x1 heavy anti-aircraft marker
- 6: x1 light and x2 heavy anti-aircraft markers

Modifier:

+1 to die roll for “Late War” games

Note: Due to the defensive ground armaments, Observation Balloons markers are also light anti-aircraft markers.

7.03 Anti-Aircraft Placement: Anti-aircraft markers may not be placed on mission marker hexes, trenchline hexes, or in the same hex as other anti-aircraft markers. Anti-aircraft markers may be placed up to

three hexes behind the trenchline.

7.04 Anti-Aircraft Fire: Anti-aircraft fire may not attack aircraft leaving the anti-aircraft marker hex, but may only attack aircraft that flew across or ended the movement phase in the same hex as an anti-aircraft marker. Roll 1d6 on the “Combat Result Table”:

Ground Fire: Roll on the 2 column

Column shift modifiers:

- 0 Target is at altitude 1
- 1 Target is at altitude 2

Light Anti-Aircraft Fire: Roll on the 4 column

Column shift modifiers:

- 1 Target is at altitude 1
- 2 Target is at altitude 2
- 3 Target is at altitude 3
- 1 Target is flying at speed 3 or 4

Heavy Anti-Aircraft Fire: Roll on the 4 column

Column shift modifiers:

- 1 Target is at altitude 2
- 2 Target is at altitude 3 - 4
- 3 Target is at altitude 5 - 6
- 1 Target is flying at speed 3 or 4

7.05 Friendly Fire (optional): When an aircraft flies over its *own* trenchline hexes, it must test for friendly fire. Roll 1d6: 1-2: Ground troops fire on the friendly aircraft; 3, 4, 5 or 6: Ground troops hold their fire.

8.00 Flight Leaders (Optional)

Players may wish to elect squadron leaders as an option. At the beginning of the game (if both sides agree), one pilot on each side may be designated a squadron leader. The only benefit of having squadron leaders is so that other players may fly in formation with the leader.

8.01 Formation Flying: Despite the secrecy rule, aircraft on the same side may fly in formation while in the air. In any maneuver selection phase, any pilots in the same hex as the squadron leader and facing in

the same direction may declare themselves “flying in formation” with him. The pilots may then record that maneuver on their own Aircraft Data Sheet and perform it during the movement phase.

8.02 Breaking Formation: Pilots may break formation at any time by simply recording a different maneuver than the one their squadron leader recorded. Pilots whose aircraft cannot perform the squadron leader’s maneuver must break formation.

8.03 Formation Leaders: If a large number of players are playing, one or more pilots should be designated as formation leaders (in addition to the one designated as squadron leader). Each side should have the same number of formation leaders.

8.04 Wingmen: One or two players may be designated as wingmen for each formation leader. Wingmen can fly in formation with the formation leaders.

9.00 Dual Controls

Only a few two-seater aircraft were fitted with dual controls. Dual controls allows the observer to fly the aircraft if the pilot is killed or wounded. Dual controls only allowed for the most basic of flying maneuvers as the elevator controls were often limited, and dual throttle controls were often NOT included.

9.01 Observers as Pilots: Observers may take over flying anytime during the game, but with the following restrictions (unless otherwise noted on the Aircraft Maneuver Schedule of the aircraft):

- The observer is considered to be a “Novice” pilot (see “13.101 Novice Pilots”). May only perform unrestricted straight maneuvers, and simple left and right turns (maneuvers #8, 14 and 20).
- The observer may not reload, or fire, the pilot’s or their own weapons while flying the aircraft.
- The observer must abort the mission while flying the aircraft.
- The aircraft may not increase its speed unless it performs steep dives.
- The observer receives a -2 penalty on the “Landing/Crashing” table.

10.00 Wounds

10.01 Wounding Pilots/Observers: During the course of a game a pilot or observer may be wounded. When a fuselage marker is pulled indicating a “Crew Wound?”, roll 1d6 for the pilot *and* for the observer. When a fuselage marker pulled indicating “Pilot Wound?, or Observer Wound?”, roll 1d6 only for the pilot or the observer: a roll of a 4 or 5 means a Light Wound has resulted (cross off one pilot/observer box); a roll of a 6 means a Serious Wound has resulted (cross off two pilot/observer boxes). When three wound boxes have been crossed off, the pilot/observer are killed.

10.02 Light Wound Effects: A pilot with a light wound may not perform restricted maneuvers and receives a -1 on the Combat Chart. Observers with a light wound receives -1 modifier on the Combat Chart. Pilots with light wounds receive a -1 penalty when landing their aircraft on the game board. Pilots/observers inflicted with a light wound receive a -1 penalty when attempting to evade capture after landing on the game board.

10.03 Serious Wound Effects: A pilot with a serious wound may not perform restricted maneuvers and may only turn left or right using maneuvers #8, 14 or 20 (left or right). A pilot with a serious wound receives a -3 modifier on the Combat Chart, may not attack targets at long range, and may not reload weapons. Pilots with serious wounds receive a -3 modifier when attempting to land their aircraft on the game board. Observers with a serious wound receive a -3 modifier on the Combat Chart, may not attack targets at long range, may not perform observation, strafing or bombing missions and may not reload weapons. Pilots/observers with a serious wound receive a -3 penalty when attempting to evade capture after landing on the game board.

11.00 Landing/Crashing

11.01 Landing and Crashing: An aircraft may land by diving to the ground while performing a maneuver that allows diving. Aircraft that are not attempting to land at "0" altitude level it will automatically crash and be considered destroyed. Roll 2d6 on the "Landing Table" (Appendix C). If the aircraft was destroyed, proceed to the "Crash Result Table" (Appendix C).

11.02 Surviving a Crash/Being Destroyed: The crew of an aircraft that crashed or was destroyed have a chance of surviving, although in some cases this chance can be very slim. Roll 2d6 on the "Crash Result Table" (Appendix C) adding/subtracting all applicable modifiers to/from the die roll.

11.03 Evading Capture: After surviving a crash, roll 2d6 on the "Evading Table" (Appendix C) to determine if the surviving crew is captured or successfully evades capture. A successful evade means the crew member has safely returned to his own lines.

Note: All surviving crew are required to roll on the Evade Capture Table no matter where they may crash/land their aircraft unless its off board. Even if an aircraft lands within its own trenchlines, it is possible that the enemy may have recently captured these trenchlines or may be in the process of attempting to capture these trenchlines.

12.00 Multiple Engines

During the war, there were quite a few multi-engine aircraft with two, three or four engines.

12.01 Multi-Engine Aircraft Damage Boxes: The maximum number of wing boxes an aircraft can have, regardless of the aircraft's size, is always 40; the maximum number of fuselage boxes an aircraft can have, regardless of the aircraft's size, is always 28. The number of "Engine Section" damage boxes a large multi-engine aircraft will have depends upon the number of engines found on the aircraft.

Multi-Engine Damage Boxes

<u>Engines</u>	<u>Damage Boxes</u>
2	7/3
3	8/4
4	10/4

Example:

7/3 = 7 Normal Damage Boxes
+3 Critical Damage Triangles

After the engine section has taken 50% damage, the aircraft must drop its bomb load (essentially, abort the mission). When there are only 2 damage boxes remaining, the aircraft must lose one altitude level every other turn.

12.02 Maneuvering Multi-Engine Aircraft: Before a multi-engine aircraft can perform left or a right maneuvers, it must first perform a simple straight maneuver (maneuver #2 or 3).

12.03 Multi-Engine Aircraft Crew: If a damage marker requires an observer to be wounded or killed, this will refer to a "gunner"; a die roll may be required to determine which gunner has been hit. Similarly, if a pilot and co-pilot are both present and a damage marker requires a pilot to be wounded or killed, a die roll may be required to determine which pilot has been hit. If the pilot is killed or wounded, the co-pilot may take over flying, providing the aircraft has a living co-pilot. If a pilot or gunner is killed, they cannot be hit again on a subsequent turn by another damage marker; damage markers indicating a crew member hit, only applies to living crew members.

13.00 Campaign Rules

The campaign game can begin at any time between June 1915 and November 1918. Although each campaign game can be organized differently, with the basic campaign game, each month is divided into one week intervals, with every gaming session, regardless of the number of games played, being equal to one week. As the campaign progresses, pilots will gain expertise, be wounded or killed, and new types of aircraft will become available.

13.01 Choosing Sides: Players choose the side that they wish to play on. The sides should be made up of equal numbers of players. The pilots that players create during the game may not change sides during the campaign, although players themselves may switch sides, providing the sides remain equal.

Dicta Bloke

1. Always try to secure an advantageous position before attacking. Climb before and during the approach in order to surprise the enemy from above, and dive on him swiftly from the rear when the moment to attack is at hand.
2. Try to place yourself between the sun and the enemy. This puts the glare of the sun in the enemy's eyes and makes it difficult to see you and impossible for him to shoot with any accuracy.
3. Do not fire the machine guns until the enemy is within range and you have him squarely within your sights.
4. Attack when the enemy least expects it or when he is preoccupied with other duties such as observation, photography or bombing.
5. Never turn your back and try to run away from an enemy fighter. If you are surprised by an attack on your tail, turn and face the enemy with your guns.
6. Keep your eye on the enemy and do not let him deceive you with tricks. If your opponent appears damaged, follow him down until he crashes to be sure he is not faking.
7. Foolish acts of bravery only bring death. The Jasta must fight as a unit with close teamwork between all pilots. The signal of its leaders must be obeyed.

13.02 Pilots/Observers: At the start of the campaign game, players may have two experienced pilots and one experienced observer. If both pilots are out of play during the course of the campaign, then a new pilot may be created; if the observer is out of play during the course of the campaign, a new observer may be created. Replacement air crew always begin as *novices*.

13.03 Bailing Out: Parachutes are only available for the German aircrews from February 1918 to the end of the war. The player announces during the movement phase that the crew of the aircraft is bailing out. Crew cannot bail out if the aircraft exploded. As soon as the pilot bails out, the aircraft will automatically go into a spin. Roll 2d6 on the "Bailing Out Table" (see Appendix C).

13.10 Experience

As pilots fly, they gain experience that may be used to acquire abilities. A pilot with less than 50 experience points is a *Novice*.

13.101 Novice Pilots: A novice may not tail enemy aircraft, but may tail friendly aircraft. Novices may not perform restricted maneuvers. Pilots who accumulate 50 points or more are considered *experienced* pilots and are not subject to novice restrictions.

13.102 Experience Points/Special Abilities: Pilots and observers receive special abilities as they accumulate experience points. One ability is received whenever the pilot or observer reaches 100, 250, 500, 750, 1000, 1250, 1500 points, etc. A pilot or observer may *also* receive one ability for every five enemy aircraft they personally destroyed; these are *Ace Abilities* (see Appendix D, "Special Abilities Table": *Ace Abilities*). Pilots can have pilot or gunnery abilities, while observers can have gunnery or observer abilities. Consult the "Experience Table", and the "Special Abilities Table" (Appendix D).

13.103 "Kill" Experience Points: If two pilots are shooting at the same aircraft when it becomes destroyed the experience for the kill is shared= both pilots receive 12 experience points. Two-seater pilots do not receive experience points for their observer's kill, only for their own. Likewise, observers do not

receive experience points for their pilot's kills, only for their own.

13.20 The Basic Campaign Missions

Players should designate their trenchline that should be no less than 3 hexes between the board edge. The Allies and Central Forces must each place their special markers within the space between the board edge and their trenchlines:

- 1) Place two markers indicating observation balloon hexes.
- 2) Place one marker indicating an HQ location.
- 3) Place one marker indicating an airfield location (this serves as a target for enemy bombing/observation; players do not use this as their home air-drome).

Note: There must be at least one hex between markers. Players may move the location of these markers between games, but not during a game.

One player from each side rolls 1d10 on the "Mission Table", and then assigns aircraft and pilots to the mission. Regardless of the mission rolled, some aircraft may be assigned to fighter sweep after assignments are made to the mission. Only one aircraft on each side may attempt to complete this mission. This aircraft does not have to be revealed to the opponents until the mission is completed. The aircraft attempting the mission must be of the appropriate type: two-seaters are used for bombing/observation, while pursuit aircraft are used for fighters sweeps and scrambles; either type may be used for strafing.

13.201 Starting a Mission: Each CO determines which game board edge hex(es), behind his own trenchline, the mission aircraft will start. Missions end when all friendly aircraft are either destroyed or have landed/escaped, or when all enemy aircraft are destroyed or have landed/escaped.

13.202 Ground Offensives: For most of the campaign game ground troops will occupy their respective trenches, but occasionally there may be a minor or major offensive in progress. At the beginning of each game, one player rolls 2d6 and consults the "Ground Offensive" Table (found at the bottom of "The Mission Table"). Ground offensive only becomes important when pilots make a forced land-

ing on the game board.

Example: If an allied pilot/observer survives a crash landing in "No-Man's Land" during a central forces ground attack, he stands a better chance of being captured; if he survives a crash during an allied forces ground attack he stands a better chance of making it back to the airdrome safely.

13.203 Winning a Campaign: The player with the pilot/observer with the most experience points at the end of the campaign is declared the winner.

13.204 Dual Campaign Totals: Ideally there are two totals to keep track of during campaign games. Players should keep track of individual totals so that players may build their skills, but players should also total their experience points so it can be determined whether the Allies or the Central Powers are winning the air war. For determining which side is winning, all experience points awarded to two-seater aircraft for completing their missions are DOUBLED.

Note: Doubling experience points for two-seaters is only for campaign games and ONLY used to determining which side is winning the airwar. Experience points for pilot/observer skills is NOT doubled.

13.205 The Missions Table: Each side rolls Roll 1d10 on the Missions Table to determine the mission for the squadron. See "Appendix E" for the "Mission Table" and for the "Ground Offensive Table".

14.00 The Fluid Game

The fluid game is an *abstract*, continuous gaming system designed for fun, fast playing at conventions. The advantage of the fluid game is that new players may join the game at anytime without having to wait for a new game to begin. There is no real set playing time limit, although it is suggested that players set a playing time of 2 hours or more, and once this time limit has been reached, the current game ends when the normal rules for "Ending a Game" has been attained. Players all play "Fighter Sweep" mission, but may fly two-seater aircraft if desired.

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14.01 Entry/Reentry Hexes: At the start of a Fluid Game, mark six map edge hexes, from 1 through 6, as entry hexes behind the allied forces trenchline, and mark six map edge hexes, from 1 through 6, as entry hexes behind the central forces trenchline. These entry hexes are used as the starting hexes for all players during the game. Players each rolls 1d6 to determine their starting hex. It is possible for more than one player to start on the same hex.

14.02 Fluid Game Rules: All Canvas Eagles game rules are in effect including the experience rules. The use of anti-aircraft guns, and mission objectives are optional.

14.03 Returning to the Fluid Game: Players who were killed, crash landed or flew off the game board, determine when they will return to the game by immediately rolling 1d6: 1 - 4 = Return in 2 turns; 5 - 6 = Return in 3 turns.

When players return to the game, again roll 1d6 to determine their starting hex. Returning players place their aircraft on their starting hex the turn *before* they are to reenter the game, although they are not actually on the game board until the turn of reentry as indicated by their reentry die roll (this allows all players in the game to see that a new aircraft is about to enter the game, rather than just having the new player just “appear” in the game). Players may return later than indicated on their die roll if they wish to enter the game with other players returning to the game, although they must enter the game within six turns of their reentry die roll.

NOTE : Players must decide at the start of the fluid game if they will allow surviving pilots to return to the same game, keeping in mind that in "real" time, the game probably only represents 30 minutes or less of actual combat time. This would not give a surviving pilot time to fly back to his air base, refuel, rearm, and return to the same dog fight. Players may elect to allow the same pilot back into a game only when 15 game turns have elapsed (the player will have to fly another pilot till 15 turns have elapsed - players may only fly one plane in a game unless otherwise specified by scenario or allowed by all players in the game).

14.04 Fluid Game Turn Recording: The “Aircraft Data Sheet” only tracks up to 30 turns. Once 30

turns have been played, players will start recording from turn 1 again. Because returning players will be reentering a game already in progress, they must start their “Aircraft Data Sheet” from the turn that is currently being played.

Example: A player is shot down on turn 6 and determines that he can return to the game on turn 8. This means upon his reentry to the game, he will be writing his first maneuver for turn 8.

William Barker

"On the morning of the 27 October 1918, this officer observed an enemy two-seater over the Foret de Mor-mal. He attacked this machine and after a short burst it broke up in the air. At the same time a Fokker biplane attacked him, and he was wounded in the right thigh, but managed, despite this, to shoot down the enemy aeroplane in flames. He then found himself in the middle of a large formation of Fokkers who attacked him from all directions, and was again severely wounded in the left thigh, but succeeded in driving down two of the enemy in a spin. He lost consciousness after that, and his machine fell out of control. On recovery, he found himself being again attacked heavily by a large formation, and singling out one machine he deliberately charged and drove it down in flames. During this fight his left elbow was shattered and he again fainted, and on regaining consciousness he found himself still being attacked, but notwithstanding that he was now severely wounded in both legs and his left arm shattered, he dived on the nearest machine and shot it down in flames. Being greatly exhausted, he dived out of the fight to regain our lines, but was met by another formation, which attacked and endeavored to cut him off, but after a hard fight he succeeded in breaking up this formation and reached our lines, where he crashed on landing. This combat, in which Major Barker destroyed four enemy machines (three of them in flames), brought his total successes to fifty enemy machines destroyed, and is a notable example of the exceptional bravery and disregard of danger which this very gallant officer has always displayed throughout his distinguished career.

VC citation, London Gazette, 30 November 1918

Appendix A - Allied Aircraft

ALLIED AIRCRAFT	STABILITY	ENGINE	WINGS	FUSELAGE	TAIL	FUEL	ARMAMENT	DIVE	CLIMB	DC	Early Altitude	Late Altitude	Starting SERVICE
Ansaldo SVA5	A	8	24	20	6	52	2R	4	2	-	-	9	Feb'18
Avro 504 (A, B & C)	A	6	32	28	5	60	1FO	2	1	-	7	7	Jun'14
Airco DH-2	B	6	25	25	6	45	1FP or 1R	2	1	-	8	7	Feb'16
Airco DH-4	B	8	40	28	6	67	1R/1FO*1	3	1	Y	-	8+	Apr'17
Airco DH-5	B	6	23	22	6	45	1R	3	1	-	-	7	May'17
Airco DH-9	B	8	40	30	6	67	1R/FO*1	2	1	Y	-	7	Feb'18
Bristol F2b	A	8	40	28	6	67	1R/1FO*1	3	1	Y	-	9	Jul'17
Bristol Scout D	B	6	20	21	5	45	1F or 1R	2	1	-	8	7	Mar'16
Hanriot D-1	B	6	20	19	4	60	1R or 2R	3	2	-	9 (8+)	8 (7+)	Aug'16
Morane-Saulnier L	C	6	20	23	4	45	1FO or 1R	2	1	-	5+	-	Apr'15
Morane-Saulnier N	C	6	18	20	4	45	1R	2	1	-	6+(7)	6+	Oct'15
Nieuport 11	B	6	14	19	4	45	1RW	2	1	-	9	7	Jan'16
Nieuport 12	B	6	24	23	4	45	1OF/1FWO	2	1	-	9	7	Nov'15
Nieuport 17	B	6	16	20	4	45	1R*2	2	2	-	9	7	May'16
Nieuport 24/27	B	6	16	20	4	45	1R*2	2	2	-	-	8	Jan'17
Nieuport 28	B	6	17	20	5	45	2R	2	2	-	-	8	Apr'18
RAF BE2c/BE2e	A	8	40	27	6	52	2OF/1RW*3	1/2	1	.*5	6+	5+	Sep'14
RAF FE2b/d	B	8	40	32	5	45	2OF	2	1	-	6+	5+	Jan'16
RAF FE8	B	6	25	23	5	60	1R	2	1	-	8	7	Jul'16
RAF SE5	A	8	26	21	5	52	1R/1RW	3	1	-	-	9	Apr'17
RAF SE5a	A	8	24	21	5	52	1R/1RW	3	2	-	-	9	Jun'17
RAF RE8	B	8	40	27	6	52	1R/1FO	2	1	-	8+	7	Feb'17
Sopwith Camel	C	6	24	18	4	55	2R	3	2	-	-	8	Jul'17
Sopwith 2F1 Camel	C	6	22	18	4	55	1R/1RW	3	2	-	-	8	Jul'17
Bently Powered Camel	C	6	24	18	4	55	2R	3	2	-	-	9	Sep'17
Sopwith Dolphin	A	8	28	22	5	45	2R (+2RW)	4	2	-	-	9	Feb'18
Sopwith 1 1/2 Strutter	A	6	28	25	6	60	1R/1FO	2	1	-	9+	8	Apr'16*4
Sopwith Pup	B	6	25	19	4	50	1R	3	1	-	9	8	Dec'16
Sopwith Snipe	A	6	27	19	5	67	2R	4	2	-	-	8	Sep'18
Sopwith Triplane	A	6	23	18	4	52	1R	3	3	-	-	9	Apr'17
SPAD A2	B	6	27	26	5	45	1FO	2	1	-	6	-	Sep'15
SPAD VII	B	8	22	20	5	52	1R	3	1	-	9	8	Sep'16
SPAD XIII	B	8	24	20	6	52	2R	4	2	-	-	9	May'17
Voison 3	B	6	38	28	5	60	1FO	1	1	-	6+	-	Jun'14
Vickers FB5 "Gun Bus"	B	6	36	27	6	60	1FO	1	1	-	5+	-	Jul'15

*1 Some had twin Lewis Guns - in a game, only one aircraft may be such equipped

*2 Some also had wing mounted Lewis Gun

*3 Armament varied from aircraft to aircraft; some had up to four Lewis Guns

*4 The single seat version introduced the month following; single seat version only has x1 Vickers MG (1R).

*5 BE2d has dual controls, although this late version aircraft was rarely used in combat

Start in Service: Introduction dates of specific aircraft can vary depending on the nationality and/or the front the aircraft was used.

DC= Dual Controls; if aircraft is equipped with dual controls, a "Y" will appear in column.

Appendix C

Landing Table

Roll 2d6 and add all applicable modifiers. A die roll result, after modifiers, of less than then required number indicates that the aircraft has crashed.

Airfield	2
Clear	3
River/Railway/Marsh	5
Woods	6
Trench Line	7
Shell Holes	8
Village	9
Road	as other terrain at +1

If more than one terrain type is located in a hex, then take the type that offers the least chance of a successful landing.

Modifiers:

- 1 if pilot has a minor wound
- 3 if pilot has a serious wound
- 1 if aircraft is flown by novice
- 2 Observer is flying aircraft (dual controlled aircraft)
- 0 Co-Pilot is flying aircraft (multiple engined aircraft)
- 1 aircraft is smoking
- 2 aircraft is on fire
- 1 aircraft is gliding
- 1 aircraft has suffered critical damage

Bailing Out Table

Roll 2d6 and subtract all applicable modifiers: A result of 8 or greater, means the crew member survives.

Unharmd	8
Minor Injury	7 - 6
Serious Injury	5
Killed	4 or less

Modifiers:

- 1 Bailing out at Altitude Level 1
- 1 aircraft is on fire
- 1 aircraft was destroyed when crew bailed out
- 1 Pilot/observer has a minor wound
- 3 Pilot/observer has a serious wound

Players may roll 1d6 to determine the drift of the parachutist: roll 1 - 3- no drift; parachutist lands in same hexagon as bail out. Drift will be one hexagon out from the bail out hex- number hexsides 1 through 6, and roll 1d6.

Crash Result Table

Roll 2d6 and subtract all applicable modifiers: A result of 8 or greater, means the pilot/observer survives.

Unharmd	8
Minor Injury	7
Serious Injury	6
Killed	5 or less

Modifiers:

- 1 crashing a pusher aircraft
- 1 aircraft was on fire
- 1 crashed in woods/trench line
- 2 crashed in shell holes
- 3 crashed in village
- 2 aircraft was shot down at altitude 1 - 3
- 3 aircraft was shot down at altitude 4 - 5
- 4 aircraft was shot down at altitude 6+

Note: Plane exploded and pilot/observer slain are all automatic deaths.

Evade Table

Roll 2d6 and add all applicable modifiers. If final result is 7 or more, then the pilot managed to evade capture.

Evaded	7+
Captured	6
Killed evading capture	2

Modifiers:

- 1* minor injury
- 3* serious injury
- +1 landed/crashed 0-3 hexes from friendly trenchlines
- +0 landed/crashed 4-5 hexes from friendly trenchlines
- 1 landed/crashed 6+ hexes from friendly trenchlines
- 1 minor enemy attack in progress
- 3 major enemy attack in progress
- +1 minor friendly attack in progress
- +3 major friendly attack in progress
- +7 crashed/landed on own side of trenchlines
- 5 crashed/landed on enemy's side of trenchlines

* Use modifiers only if evading from enemy territory or no-man's land.

If captured there is one chance of either being exchanged as a PoW or escaping: roll a "2" on a roll 2d6, and the person has escaped. Roll 1d100 for number of weeks person is out of the war. Failure to escape: For you, the war is over.

INJURIES:

Minor: roll 1d6(-1) = weeks out of service (min. of 1 week out)
Serious: roll 3d6 = weeks out of service; if a triple number (all three dice roll the same number) is rolled, crew member is sent home for the duration of the war.
 For injuries, see section: "10.00 Wounds".

Appendix D

Experience Table

Pilot Experience Points:

1	per turn flying on the board*
24	per kill
5	per successful mission
2	per each "Red" hit**

Observer Experience Points:

5	per mission
5	per successful mission
24	per kill
2	per each "Red" hit**

* If the enemy abandons the board, all remaining pilots are considered to have flown off the board on turn 25 if less than 25 turns have been played.

** Aircraft must be on a "Fighter Sweep" or "Scramble" mission to receive.

Concentrated Fire Table

Concentrated fire is an "ACE" ability. Roll 1d6 on the appropriate Target Clock Position column to determine the target area of the Concentrated Fire:

Die Roll	Target Clock Position			
	12	10/2	4/8	6
1	E	E	T	T
2	E	W	F	T
3	E	W	F*	F
4	F	W	F	F*
5	W	F*	F*	F*
6	W	F	W	F*

W= Wing; F= Fuselage; T= Tail; E= Engine

All damage inflicted goes into the Concentrated Fire "target area".

* Check for possible Crew Hit.

Special Abilities Table

Pilot Abilities:

Cannot Be Tailed: Pilot may not be tailed by any enemy other than an ace (five kills).

Maneuver: Pilot treats all restricted maneuvers as unrestricted - reloading, unjamming, and observers firing is still prohibited; if critically damaged, aircraft must test for destruction; penalty for firing while performing a restricted maneuver still applies.

Spin Skill: A pilot may only choose this ability at 250 experience points or greater. Pilot may voluntarily put his aircraft into a spin; uses a normal die roll for spin recovery.

Spin Recovery: A pilot may only choose this ability at 250 experience points or greater. Pilot may increase his chance of getting out of a spin. For every 250 experience points gained, a +1 bonus to the Spin Recovery die roll. A roll of "2" is always a Spin Recovery failure.

Tailing: Pilot may tail aircraft at a distance of up to 4 hexes instead of three.

Stability: For combat, aircraft stability C is treated as B; B stability is treated as A (observers do not receive this advantage when flying with the pilot; pilots may not take this skill twice).

Gunnery Abilities:

Die Roll Add: The attacker adds +1 to the die Combat die roll.

Unjamming: The attacker's weapon may be unjammed on a 3, 4, 5 or 6.

Deflection: The attacker ignores deflection when shooting.

Observer Abilities:

Observing: May observe from altitude level 5, or lower, or from a hex adjacent to the target if at altitude level 4 or less.

Bombardier: May add +1 to all bombing rolls.

Ace Abilities (must have 5 kills):

Concentrated Fire: The ace may concentrate his fire at range 1 or 0. The ace rolls 1d6 on the Concentrated Fire Table (locate to the left of this table), and all damage goes into the Concentrated Fire "target" area.

Fire Value: May shift combat table one line up (ie. a CV total of "10" will become "11").

Range: Fires as if ace were one hex closer (if combining with concentrated fire, the ace may concentrate his fire from two hexes instead of one). The range may never be reduced from one to zero.

Appendix E

The Mission Table

Roll 1d10

- 1 Observe enemy airfield
- 2 Observe enemy HQ
- 3 Observe enemy troop concentration
- 4 Bomb enemy airfield
- 5 Bomb enemy HQ
- 6 Directing artillery fire
- 7 Strafe enemy trenchline
- 8 Balloon busting
- 9 Fighter sweep
- 10 Scramble

Ground Offensive Table: Roll 2d6

- 2 Major Central Forces ground attack in progress
- 3 Minor Central Forces ground attack in progress
- 4-10 All is quiet on the front
- 11 Minor Allied Forces ground attack in progress
- 12 Major Allied Forces ground attack in progress

1-3: Observation

Aircraft must be at altitude level 4 or less to observe and must fly directly over the target hex. The observing aircraft may only observe the specified target. Observation aircraft must return to their airfield and land safely to receive points for the mission.

Observe Enemy HQ/Airfield: For a successful mission, observers receive 20 points; pilots receive 10 points.

Observe Troop Concentrations: The player who flies the mission secretly designates four hexes in a row of enemy trenchline as troop concentrations to be observed. Pilots receive 3 points and observers receive 6 points for each hex observed. For a successful mission, at least 2 of the 4 hexes must be observed.

4-5: Bombing

Bombing is done at altitude level 4 or less. The observer conducts the bombing as the last item in the combat phase. Observers may not fire their weapons while bombing. Hits scored on the target will destroy the target; destroyed targets may not be bombed again for additional points. The mission is a success if the

target is destroyed. For a successful mission, pilots receive 10 points and observers receive 20 points. Aircraft carry enough bombs for only 3 bombing attacks. Roll 1d6 per bomb attack:

- At altitude 1 or 2: 2, 3, 4, 5 or 6 scores a hit
- At altitude 3 or 4: 3, 4, 5 or 6 scores a hit

6: Directing Artillery Fire

Directing artillery fire must be at altitude level 4 or less. The player flying the mission designates six hexes in a row behind his own trenchline as the observation area. The mission is successful when the aircraft finishes 1d6 trips along this hex row. Observers may not fire their weapon(s) while directing artillery fire. For each trip along the observation area, observers receive 6 points; pilots receive 3 points.

7: Trench Strafing

Any aircraft type may trench strafe. Trenches can only be strafed from altitude level 1 and only medium or long bursts may be fired. For each trenchline hex fired upon, both pilot and observer receive 4 points, up to a maximum of 20 points each. If 3 or more trenchline hexes are strafed, the mission is a success.

8: Balloon Busting

Observation balloons are always at altitude level 1, are considered to be stalled, and are only destroyed if hit by two or more RED damage chits results in a single turn from a single attacker (exception, see: "6.08 Le Prieur Anti-Balloon Rockets"). Aircraft armed with incendiary rounds (all aircraft after July 1917) add +1 to their combat die rolls when shooting at observation balloons. Due to the concentration of defensive ground armaments, treat observation balloon markers as light anti-aircraft markers (see section 7.02).

9: Fighter Sweep

Pilots assigned to fighter sweeps receive 2 points for each RED damage chit inflicted upon enemy aircraft. If the enemy loses more aircraft than your side, the mission is successful.

10: Scramble

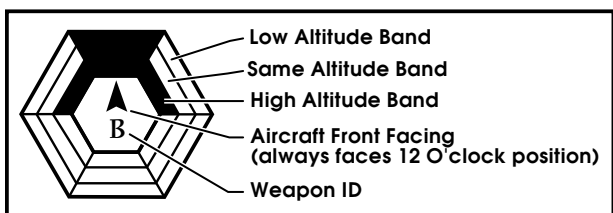
Same as a "Fighter Sweep", but all aircraft start on the ground at their airfield. This mission is successful if the enemy loses more aircraft than your side.

COMBAT TABLES

COMBAT VALUES				
3	2	1	0	RANGE (IN HEXES)
2	3	5	7	Base Value
+0	+0	+0	+0	Short Burst/Free Firing a Cannon
+1	+1	+2	+2	Medium Burst
+2	+2	+3	+4	Long Burst
+0	+1	+2	+3	Stability A
+0	+0	+1	+2	Stability B
-1	+0	+0	+1	Stability C
-3	-2	-1	+0	Shooter's Speed is 3 or 4
+2	+2	+2	+2	Firing with Dual Weapons
+0	+0	+0	+0	Firing with Single Weapon
P	-6	-6	-6	Free Firing a Cannon
-2	-1	-1	+0	Firing Flexible Weapon(s) (F)
-3	-2	-1	-	Firing with Deflection*
P	-7	-6	-	Firing at a Spinning Aircraft
-1	-1	-1	-1	Performed a Restricted Maneuver
+0	+1	+1	+2	Shooter fired at target last turn
+1	+1	+2	+2	Shooter tailed target last turn
+0	+1	+1	+1	Target is at Lower Altitude
-2	-1	-1	-1	Target is at Higher Altitude
+2	+2	+3	-	Target is Stalled
-1	-1	-1	-1	Shooter has a Minor Wound
P	-3	-3	-3	Shooter has a Serious Wound

* Not to be combined with "Firing at a Spinning Aircraft Modifier".
P = Prohibited/may not fire

COMBAT RESULTS TABLE Roll 1d6						
CV	1	2	3	4	5	6
1	-	-	-	-	B	B
2	-	-	-	B	B	B
3	-	-	B	B	B	B
4	-	B	B	B	B	2B
5	B	B	B	B	2B	R
6	B	B	B	2B	R	R
7	B	B	2B	R	R	2R
8	B	2B	R	R	BR	2R
9	2B	R	R	BR	2R	3R
10	R	BR	BR	2R	3R	B3R
11	BR	BR	2R	3R	B3R	4R
12	BR	BR	B2R	3R	B3R	B4R
13	BR	2R	3R	B3R	4R	5R
14	2R	3R	B3R	4R	5R	6R
15	3R	B3R	4R	5R	6R	7R
16	B3R	4R	5R	6R	7R	8R
17	4R	5R	6R	7R	8R	9R



SEQUENCE OF PLAY

1. Tailing Phase
2. Maneuver Selection Phase
3. Fuel Expenditure Phase
4. Movement Phase
5. Combat Phase
6. Damage Phase
7. Recovery Phase
8. Problem Phase
9. Fire Damage Phase
10. Fire/Smoke Extinguishing Phase



CREW WOUNDS Roll 1d6

- 1, 2 or 3 : No Effect
 4 or 5 : Light Wound - cross off one wound box (□)
 6 : Serious Wound - cross off two wound boxes (□ □)
 Note: Crew member is killed when three wound boxes have been crossed off.

JAMMING After firing a "long" burst, Roll 1d6

- 1, 2, 3 or 4 : Weapon(s) do not jam
 5 or 6 : Weapon(s) are jammed

UNJAMMING/RELOADING Roll 1d6

Pilots: Must perform a simple straight maneuver, #2, 3 or 4 (no climbing or diving is permitted while attempting to unjam/reload a weapon).
Observers: May unjam only when aircraft performed non-restricted straight maneuvers or maneuvers #1, 8, 14 and 20. May reload while aircraft is performing "shallow" dives and climbs.

- 1, 2 or 3 : Weapon(s) remain jammed
 4, 5 or 6 : Weapon(s) are unjammed

CRITICAL DAMAGE Roll 1d6

Once all damage boxes (□) are crossed off, and at least 1 damage triangle (∇) is also crossed off, "Critical Damage" has occurred. Critically damaged aircraft making restricted maneuvers (steep climbs and restricted maneuvers for a critically damaged engine) can break apart (these aircraft are destroyed).

DIE ROLL	ENGINE	OTHER SECTIONS
1, 2, 3 or 4 :	No Effect	No Effect
5 or 6 :	Engine Seizes	Aircraft is destroyed

SPINS & SPIN RECOVERY Roll 2d6

- Spins:** Aircraft **MUST** test for spinning whenever the aircraft:
- 1) attempts to climb *above* its maximum altitude;
 - 2) performs a stall maneuver (maneuver #1);
 - 3) receives a RED damage hit in the wing or tail section;
 - 4) attempts to climb when previous turn's maneuver requires aircraft to dive.

Aircraft spins on a roll of: 2 - 5

Spin Recovery:
 Aircraft recovers from spin on a roll of: 7 - 12

Modifiers to the Spin/Spin Recovery die roll: Stability A +1; Stability B +0; Stability C -1; Novice Pilots/Observers: -1; Pilot has Serious Wound -1

Note: Spinning aircraft mark maneuver OS1 for the turn(s) they spin. Aircraft failing to recover drops 1 altitude during the *Maneuver Phase*.

Lewis, Hotchkiss & Parabellum MG

Firing a Lewis Gun, Hotchkiss or Parabellum Machine Gun: players must cross off the appropriate ammo boxes. When entire row is crossed off the ammo drum is *empty* and must be reloaded with a new one before it may fire again.

- Short Burst:** Cross off "1" Ammo Box (□)
Medium Burst: Cross off "2" Ammo Boxes (□ □)
Long Burst: Cross off "3" Ammo Boxes (□ □ □)

When firing a Lewis Gun and a Vickers Machinegun together, check for jams and unjamming separately; both machineguns must fire the same length of burst. The Vickers or the Lewis Gun may fire independently of each other only if one is jammed. A long burst from the Vickers and a short or medium burst from the Lewis equals a medium burst.



THINGS TO KNOW (all die rolls are 1d6)

Maneuver Restrictions: You may NOT choose:

- 1) a maneuver requiring more fuel than the aircraft currently has;
- 2) a RESTRICTED MANEUVER, unless your previous turn's maneuver was a simple straight flight (maneuver #2, 3, or 4);
- 3) two non-repeatable maneuvers (bracketed [] maneuvers) in a row;
- 4) a maneuver whose speed number differs more than one from the previous turn's maneuver.

Aircraft Stability: Stability "A" and "B" aircraft cannot perform a left turn one turn, and a right turn on the following turn (or vice versa). These aircraft **MUST** perform straight maneuvers between direction changes.

Novice Pilot's Maneuver Restrictions: Cannot perform restricted maneuvers; cannot tail enemy aircraft.

Effects of Smoke: Pilot may not tail. Smoke goes out on a roll of a 5 or 6, but turns to fire on a roll of a 1.

Effects of Fire: Pilot may not tail, shoot or perform restricted maneuvers. Observers may fire while their aircraft is on fire. One blue chit is drawn, per turn, for fire damage (Fire Damage Phase).

Extinguishing Fire: The fire is out on a roll of 5 or 6; if a sideslip is performed (maneuver #8, 16 or 17), fire is out on a roll of 4, 5 or 6. Extinguished fire is replaced with Smoke.

Gliding: Must select maneuver #2, 3 or 8. Lose 1 altitude every other turn when maneuver #2 or 8 is selected; must lose 1 altitude every turn when maneuver #3 is selected.

Fuel Consumption: The maneuver's fuel consumption rating is equal to the speed of the aircraft.

- **Diving**, regardless of altitude levels dived: Fuel cost is (-)1.
- **Climbing**, regardless of altitude levels climbed: Fuel cost is (+)1.
- **Zoom Climbing**, regardless of altitude levels climbed: Fuel cost is (+)0.

Zoom Climbing: Must have dived 2 altitudes or more on the previous turn to qualify as a Zoom Climb.

Reloading Weapons:

Pilots: must perform a simple straight maneuver #2, 3, or 4, and may not climb or dive, or not attempt to unjam the weapon at the same time.

Observers: may only reload weapons providing the aircraft performed an unrestricted straight maneuver, or simple left or right maneuvers (maneuver #8, 14, or 20), and not attempt to unjam the weapon at the same time. Reloading may take place while aircraft is performing a "shallow" climb or dive; observers may not reload while aircraft is performing a steep climb or dive.

Note: Weapon may not be fired the turn it is being reloaded or unjammed.

Steep Dives: A dive which is greater than 1 altitude level is considered a Steep Dive. The aircraft will gain one speed (no greater than its maximum speed) when a steep dive is executed regardless of the number of altitude levels dived.

Steep Climbs: A climb which is greater than 1 altitude level is considered a Steep Climb. The aircraft will lose one speed when a steep climb is executed regardless of the number of altitude levels climbed.

BATTLE DAMAGE

Basic Battle Damage: When an aircraft suffers damage, cross off one damage box (☐) for each hit received. Once all damage boxes (☐) and damage triangles (∇) have been crossed off an entire section, the aircraft is destroyed.

Critical Battle Damage: Once all damage boxes (☐) are crossed off, and at least 1 damage triangle (∇) is also crossed off, "Critical Damage" has occurred. Aircraft with critically damaged "Wing", "Fuselage" or "Tail" sections may be destroyed if a restricted maneuver is performed. Aircraft with a critically damaged "Engine" may have their engine seize if a steep climb, dive or a restricted maneuver is performed.

<u>DIE ROLL</u>	<u>ENGINE</u>	<u>ALL OTHER SECTIONS</u>
1, 2, 3 or 4:	No Effect	No Effect
5 or 6:	Engine Seizes	Aircraft is destroyed

Engine Seizure: Test for engine fire, roll 1d6= 6: Engine on Fire; 5: Engine Smoking; 1, 2, 3 or 4: No Fire/Smoke. Aircraft with seized engines must glide for remainder of game.

WOUND EFFECTS

Light Wounds:

Pilots: May not perform restricted maneuvers; -1 on the Combat Table; -1 when attempting to land aircraft; -1 when attempting to evade capture on game board.

Observers: -1 on the Combat Table; -1 when attempting to land aircraft (when pilot is killed and providing aircraft is equipped with dual controls); -1 when attempting to evade capture on game board.

Serious Wounds:

Pilots: May not perform restricted maneuvers; -3 on the Combat Table; long range fire is prohibited; may only turn left or right using maneuvers #8, 14 or 20; may not reload weapons; receives -3 when attempting to land aircraft; -3 when attempting to evade capture on game board.

Observers: -3 on the Combat Table; long range fire is prohibited; may not perform observation, strafing or bombing missions; may not reload weapons; receives -3 when attempting to land aircraft (when pilot is killed and providing aircraft is equipped with dual controls); -3 when attempting to evade capture on game board.

Anoxia: Used for Late War games only. Aircraft operating at altitude levels 9 and 10 must test to see if crew members pass out from lack of oxygen. During the Problem Phase Roll 1d6. If the pilot has passed out, the aircraft automatically goes into a spin.

Roll 1d6:

Altitude 9: The crew member passes out on a roll of 5 or 6

Altitude 10: The crew member passes out on a roll of 3, 4, 5 or 6

Note: Observers must also test to see if they pass out; however, if an observer passes out, the aircraft will not go into a spin. Crew members who pass out may not fire, reload, or unjam their weapons. The crew member automatically recovers at altitude level 8, but a spinning aircraft must still recover from the spin (use normal spin recovery roll).

Carbines/Rifles: Treat these weapons as "Flexible" when firing. Hits from these weapons only inflict "1" damage point to the aircraft section regardless of damage printed on damage chit. All other damage results, such as Pilot Killed, Crew Wounds, Fabric Tears, etc., will apply.

Open Damage Results: The only obvious damage results in the game (ie damage results that opposing players can see and recognize) is when an aircraft has been destroyed (has had all of its damage boxes/triangles crossed off), is spinning, is issuing smoke or is on fire. All other results are kept secret. If a pilot is killed, the aircraft immediately goes into a spin (plot 0S1) and will remain spinning until it reaches altitude "0", where upon it is destroyed.

Friendly Fire (optional): When an aircraft flies over its own trench-line hexes, it must test for friendly ground fire. Roll 1d6:

1 or 2: Ground troops fire on the friendly aircraft

3, 4, 5 or 6: Ground troops hold their fire.

14.05 Fluid Games & Two-Seaters (optional): Air-combat during the First World War revolved around the two-seater aircraft, and it was the single seater fighter's main task was to provide protection to the two-seater aircraft. Because of this, most games should involve two-seater aircraft. Each side should number their players from #1 on up, and in that sequence, should fly a two-seater aircraft, using the mission guidelines provided in "Appendix E". The following rules will apply:

- 1) Player #1 must start the game flying a two-seater aircraft.
- 2) Once player #1 has either flown off the board or has been destroyed, player #2 must fly a two-seater the next time he/she enters the game.

Keep in mind that any player may fly a two-seater in a game without having to wait their turn.

14.06 Winning a Fluid Game: If players allow a pilot to return to the game after leaving the board, then the pilot or observer, surviving or killed, with the most experience points by the end of the fluid game is declared the winner. If it is determined that new pilots must return if a player's pilot flies off the board, then the player with the most experience points by the end of the fluid game is declared the winner.

15.00 The Timed Game

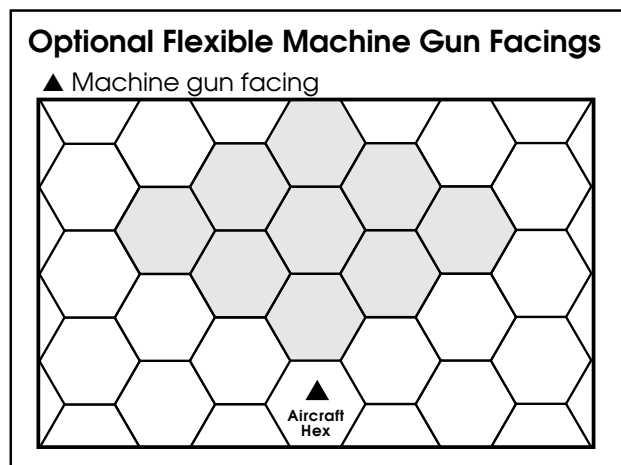
This rule is only to be used when playing with experienced players. A timer is employed to allow only 2 minutes per turn. Players failing to mark their maneuvers by the end of the maneuver selection phase must move a simple straight (at the same speed as last turn). If the last turn's speed was a stall, then the current turn's maneuver will be a 2S1.

16.00 Untried Rules

16.01 Flexible Machine Gun Facings (optional):

Observers/gunners must indicate the hex side to which their *flexible* machine gun is facing at the start of a game. This facing must be listed on the Aircraft Record Sheet in the "Notes Section" on a turn-to-turn basis. There are six possible hexside facings, numbered 1 through 6 (check the weapon's fire arc -- some weapons may have a limited fire arc). Hex facing "1" is towards the front of the aircraft, facing "2" is the 2 O'Clock hex side, facing 3 is the 4 O'Clock facing, facing "4" is the 6 O'Clock facing (towards the rear of the aircraft) etc. An observer/gunner may not be facing in a direction which is not allowed by his weapon's arc of fire. The observer/gunner may change his facing once per turn, up to a maximum of one hexside per turn. This facing change is done at the end of the movement phase. The player announces to the rest of the players that he/she is changing the facing of his observer's/gunner's machine gun, and then moves the "Flexible Machine Gun Facing" marker to point in the new, correct direction. The marker is placed directly onto the aircraft's stand.

Example: If the observer were facing in direction 2 (the 2 O'Clock position), he may, for this turn, remain facing direction 2, or may change his facing to either direction "1" (12 O'Clock position) or to direction "3" (4 O'Clock position).



World War I Air Combat

16.02 Oxygen (optional): From January 1918 onward, German observation aircraft, or high altitude fighters were often supplied with an oxygen supply. The allied airforces only rarely equipped oxygen to its aircrews. Usually this consisted of a small oxygen tank and a rubber breathing tube; crude as it was, it did work. Crews which have a oxygen supply are not affected Anoxia (see: "3.2193 Anoxia"). Roll 1d6 to determine if the aircraft is equipped with an oxygen supply.

German: 1 - 4 = carries oxygen

Austrian/British/French/Italian: 1 = carries oxygen

Russian/Romania: No Chance

SUN POSITION

Rules -3 off firing

Same level or above - lower targets are not affected.
Must be up sun, same altitude or higher and providing there is not a cloud between the target and the sun.

CLOUDS

Clouds - check for spins; cannot shoot through or into a cloud. Clouds occupy two altitude levels.

Cowardly Behaviour:

Pilot wound (light or Serious)

Any section Damaged 50% or more

Guns destroyed/observer gunner dead/observers only gun destroyed

Out of Ammunition

Low Fuel - 25% or less

Mission Completed

PILOT ID CARDS

Must hand in ID cards

Player's Name

Aircraft Type Flown

Nationality

Pilot Name

Experience

Kills

Skills: Combat / Maneuvering Skills