Flying Circus

Air Combat During the Great War
By David Schueler

1.0 Introduction

Flying Circus is a quick and easy World War I air combat game, it is meant to cover air combat from 1915 through 1918. The game is based on Avalon Hill's ***Mustangs*** game. *Flying Circus* was created with a hex-mat and miniatures in mind, but could be played a regular hex-map with counters. A hex-map and counter-sheet have been included with these rules. You will have to mount and cut out the counters yourself.

2.0 Game Equipment

Players should have the following equipment available in order to play the game.

2.1 Air Units:

Each miniature (or counter) represents one aircraft. The information for each type of aircraft is given in the Aircraft Table and should be entered on the Control Card for that aircraft before starting a game.

2.2 Gameboard (map):

The game is played on a map with hexagons (hexes). The hexes are used to regulate movement and positioning. The front of an aircraft must always be pointing at a hexside (not a hex angle). The playing area should be a minimum of 12 by 18 hexes.

2.3 Control Card:

A Control Card shows the game information for a specific aircraft type. The cards are used to track the current status of aircraft in the game. Each card has room for keeping track of two aircraft. Before starting a game, fill out the control card with data from the Aircraft Information Chart. In the Maneuver section on the Control Card, enter the maneuver numbers for the aircraft. The information entered is based on symbols in the Loop, Turn, and Roll columns in the Aircraft Information Chart. Use the same numbers for Turn and Tight Turn. (Example: For a Sopwith Pup, in the Turn and Tight Turn rows the player enters 1, 1, 1, and 2 for speeds 1 – 4. The speed 5 and 6 columns are left blank since the Pup cannot go that fast.) A completed set of Control Cards and a blank set are included after the Charts and Tables.

2.4 Markers:

You will need the following markers for each aircraft in the game:

- 8 Maneuver Markers: these are placed on the map to show the maneuver an aircraft is doing.

2.5 Dice:

The game uses six-sided and ten-sided dice. The "0" on the ten-sided die is read as a 10. Unless stated by the specific rule, the die used is a ten-sided die.

3.0 Sequence of Play

The game starts after setup is complete and is played in a series of game turns. Each game turn consists a Break-Off Phase, followed by six impulses, followed by a Change Phase. The game turn sequence is explained below:

1) Break-Off Phase: During this phase aircraft may attempt to break-off from the fighting.

2) Impulse Phase: There are six Impulses in each game turn. Each Impulse Phase is broken down into the following Segments:

a) **Movement Segment:** All aircraft moving at the speed in the columns marked with an X must move one hex. Air units that could have moved, but are Out of Control (OOC) check for recovery. If they do not recover, then reduce their altitude by one level. Aircraft that reach their Maneuver Marker complete their maneuver. Adjust Aircraft Control Cards for any speed changes.

b) **Spotting Segment (optional):** Players attempt to spot enemy aircraft.

c) **Pilot Attack Segment:** Aircraft that moved may fire their pilot controlled guns at enemy aircraft that are in range and fire arc. The side <u>with</u> the Initiative Marker fires first. After all pilots have fired, pilots that are attempting to reload and clear jams check for success.

d) **Observer Attack Segment:** Aircraft with eligible Observers may fire their observer controlled guns at enemy aircraft that are in range and fire arc. The side <u>with</u> the Initiative Marker fires first. After all observers have fired, observers that are attempting to reload and clear jams check for success.

e) **Maneuver Marking Segment:** Aircraft that do not have a maneuver marker on the map must place a marker. The marker is placed at

the appropriate distance from the aircraft. The side with the Initiative Marker places maneuver markers first. After all markers are placed, pilots/observers mark that they are attempting to reload a gun.

f) **Impulse End:** If the current impulse is Impulse 6, go to the Change Phase. Otherwise, go to the next impulse by repeating Steps a - f.

3) Change Phase: Each aircraft adjusts its current altitude and/or speed for the next turn (the speed may change during the impulses). The side with the Initiative Marker makes altitude and/or speed changes first. After altitude and/or speed changes are made, aircraft that are on fire check to see if they put the fire out.

4.0 Initiative

At the beginning a game each side rolls one die to determine which side starts with the Initiative Marker. The side with the highest die roll controls the Initiative Marker. If the die rolls are the same, re-roll until one side has a die roll. The side that has the Initiative Marker places Maneuver Markers first during the Maneuver Marking Segment of each Impulse (exception seen rule **5.2.1 Tailing Advantage** and **11.0 Special Pilot Abilities**), fires guns first in the Pilot and Observer Attack Segment, and makes altitude and/or speed changes first during the Change Phase.
A side may pass the Initiative Marker to the other side at the end of any Impulse Segment or Phase during a game turn.

5.0 Movement

All aircraft movement and combat occurs during the Impulse Phase. During each Movement Segment refer to the Movement Impulse Chart for the current impulse to determine which aircraft will move. All aircraft moving at the speeds in the columns marked with an X for the current Movement Segment must be moved. Each aircraft is moved into the hex directly in front of it (Exception: aircraft that are out of control do not move). If the aircraft reaches its current maneuver marker, the marker is removed and the aircraft completes the maneuver as described below.

5.1 Setting Speed

At the start of a game, the speed for each aircraft is set. Aircraft speed at the start of the game may be any speed up to the aircraft's maximum level speed (as shown on the Aircraft Control Card for the aircraft).
During the Change Phase, each aircraft adjusts its speed for the next turn. On the Aircraft Control Card Change Chart, cross-reference the desired change in altitude with the aircraft's engine type (Normal or Damaged) to find the possible speed changes that can be made with the altitude change.
When setting speed in the Change Phase, if the aircraft dove, its speed may not exceed its maximum dive speed. If the aircraft did not dive during the Change Phase, it may not exceed its maximum level speed.

5.2 Placing Maneuver Markers

During the Maneuver Marking Segment, aircraft without maneuver markers must place a maneuver marker. Aircraft that have maneuver markers cannot change those markers. The side with the Initiative Marker places maneuver markers first, then the other side (exception: see rule **5.2.1 Tailing Advantage** and **11.0 Special Pilot Abilities**). The maneuver marker is placed a certain number of hexes in front of the aircraft. The number of hexes is determined by cross-referencing the aircraft's current speed and the desired maneuver on the Maneuver Chart. The number shown on the chart is the number of hexes the marker is placed in front of the aircraft.

5.2.1. Tailing Advantage

If an aircraft that needs to place a maneuver marker is in the rear arc of an enemy aircraft, facing toward the enemy aircraft and within 3 hexes, it does not place its maneuver marker until after the enemy aircraft has placed its marker. In this case the side with the Initiative Marker places maneuver markers for all other aircraft, then the side without the Initiative Marker places maneuver markers and finally any tailing aircraft place their maneuver markers.

5.3 Maneuvers

There are five basic maneuvers that an aircraft can perform. Not all aircraft can perform all the maneuvers shown below. Each maneuver is explained below.

5.3.1 Straight Maneuver:

If this maneuver is chosen, a "Straight" marker is always placed one hex in front of the aircraft. During the appropriate Movement Segment the aircraft will move into this hex without changing facing.

5.3.2 Turn Maneuver (Right or Left):

If this maneuver is chosen, a "Right Turn" or "Left Turn" marker is placed in front of the aircraft the number of hexes shown on the Maneuver Chart. When the aircraft reaches the marker, the marker is

removed and the aircraft is turned one hexside left or right (depending on the turn direction).

5.3.3 Tight Turn Maneuver (Right or Left):

If this maneuver is chosen, a "Right Tight Turn" or "Left Tight Turn" marker is placed in front of the aircraft the number of hexes shown on the Maneuver Chart for a turn. When the aircraft reaches this marker, the marker is removed and the aircraft is turned two hexsides left or right (depending on the turn direction). Completing this maneuver reduces the aircraft's speed by one; adjust the speed marker to show one less speed in the aircraft's speed track. If the pilot of the aircraft has a Green or Inexperienced Pilot Quality Rating or the loss in speed reduces the aircraft's speed to zero, then the controlling player must make a check to see if the pilot loses control of the aircraft (see rule **5.4 Losing Control of an Aircraft**).

5.3.4 Roll Maneuver (Right or Left):

If this maneuver is chosen, a "Right Roll" or "Left Roll" marker is placed in front of the aircraft the number of hexes shown on the Maneuver Chart. When the aircraft reaches this marker during the Movement Segment, the marker is removed and the aircraft is moved one hex row right or left (depending on the roll direction) and back one hex.

5.3.5 Half Loop Maneuver:

If this maneuver is chosen, a "Loop" marker is placed in front of the aircraft the number of hexes shown on the Maneuver Chart. When the aircraft reaches this marker during the movement phase, the marker is removed and the aircraft is turned three hexsides. Completing this maneuver reduces the aircraft's speed by one; adjust the speed marker to show one less speed in the aircraft's speed track. If the pilot of the aircraft has a Green Pilot Quality Rating or the loss in speed reduces the aircraft's speed to zero, then the controlling player must make a check to see if the pilot loses control of the aircraft (see rule **5.4 Losing Control of an Aircraft**).

5.4 Losing Control of an Aircraft

Because of the strains of combat, poorly trained pilots or those that are not familiar with their aircraft may attempt to do too much in the aircraft and subsequently lose control of it.

5.4.1 Loss of Control Checks

If an Inexperienced or Green Pilot makes a Tight Turn or a Loop Maneuver, the controlling player must check for a loss of control. The player controlling the pilot rolls one die, if the result is 1 - 6 for an Inexperienced Pilot or 1 - 4 for a Green Pilot then the maneuver is completed and play continues normally. If the die roll is outside this range, the pilot has lost control of the aircraft.

If an aircraft's speed is reduced to 0 or less by a maneuver during a Movement Segment, then the player controlling the aircraft must check for loss of control. The player controlling the aircraft rolls one die, if the result is 1 - 8 for an Ace, Experienced, or Average Pilot, 1 - 6 for an Inexperienced Pilot or 1 - 4 for a Green Pilot then the pilot does not lose control and the aircraft's speed is set at 1. If the die roll is outside this range, the pilot has lost control of the aircraft.

(*Optional*) If a Wing hit is scored against an aircraft during any Attack Segment, then the player controlling the aircraft must check for loss of control. The player controlling the aircraft rolls one die, if the result is 1 - 8 for an Ace, Experienced, or Average Pilot, 1 - 6 for an Inexperienced Pilot or 1 - 4 for a Green Pilot then the pilot does not lose control and the aircraft's speed is set at 1. If the die roll is outside this range, the pilot has lost control of the aircraft.

5.4.2 Loss of Control Effects

An out of control aircraft stays in its current hex at its current speed (an aircraft that had its speed reduced to 0 or less is treated as being at speed 1). During any impulse in which the aircraft would normally move, the controlling player checks to see if the pilot can recover the aircraft.

5.4.3 Loss of Control Recovery

During any impulse in which the aircraft would normally move the controlling player checks to see if the pilot can recover the aircraft. The player controlling the pilot rolls one die, if the result is 1 - 8 for an Ace, Experienced, or Average Pilot, 1 - 6 for an Inexperienced Pilot or 1 - 4 for a Green Pilot then the pilot recovers control of the aircraft. If the die roll is outside this range, the pilot does not recover control.

If the pilot recovers, randomly determine the aircraft's heading and speed as follows:

- Roll 1 six-sided die and subtract the number from the aircraft's current speed. This is the aircraft's new speed. If this would reduce the aircraft's speed to ≤ 0, then set the new speed to 1.
- Roll 1 six-sided die to determine the new aircraft facing. The number rolled is the number of hexsides the aircraft is turned from its current heading. Aircraft are always turned clockwise to determine the new heading.

The aircraft then continues play normally.
If the pilot does not recover, then reduce the altitude of the aircraft by one level. If this would take the aircraft below altitude level 0, then the aircraft has crashed and is removed from the game (Note: the opposing side gets credit for a kill, even if the aircraft was not fired on).

6.0 Combat and Damage

Gun combat takes place in the Pilot and Observer Attack Segments of the Impulse. Each pilot or observer can only fire at one target during the appropriate Attack Segment. The side that has the Initiative Marker may attack with all of its pilots that moved during the impulse or observers (it does not matter if the observer's aircraft moved) and then the side without the marker may attack. The effects of an attack are determined and executed immediately. In order to be eligible to fire a pilot/observer must meet the following conditions:

- The firing pilot's/observer's gun(s) must have ammunition remaining and loaded.
- The firing aircraft must be in a hex and facing as shown in the Gun Firing Position chart within one altitude level of the target.
- For pilots, their aircraft must have completed a maneuver (i.e. the maneuver marker for the aircraft was removed during the Movement Segment).
- If an aircraft is in the same hex and same altitude as another aircraft (enemy or friendly), a pilot may not fire his guns.
- An observer may not fire his guns at an enemy aircraft at a lower altitude in the same hex or at a lower altitude in the hex directly behind the observer's aircraft.

6.1 Attack Resolution

If the pilot/observer is eligible to fire and the controlling player wishes to attack, the player announces that the aircraft is attacking and which aircraft is the target. Then the player moves the ammo marker for the pilot/observer down one to show the expenditure of ammunition.

To determine if gunfire hits the target aircraft the player that fired and the player controlling the target aircraft each roll a die and modify it as follows:

<u>The player that is firing (Attacker) adds:</u>

+ x	Pilot/Observer Gun Attack Value (see specific Aircraft Control Card for this number)
<u>+</u> x	The number shown on the Gun Firing Position Diagram (there are separate diagrams for pilot controlled and observer controlled guns)
+ 4	Ace Pilot/Observer firing
+ 2	Experienced Pilot/Observer firing
+ 2	Target is a Large Aircraft
- 1	Firing Pilot/Observer Wounded
- 2	Green Pilot/Observer firing
- 2	Target aircraft is one altitude level higher or lower
- 2	Firing aircraft has Turn or Roll marker out (observer only)
- 3	Firing aircraft has Tight Turn or Loop marker out (observer only)
+ 4	If firing aircraft is not spotted (optional)
- 1	Per gun if firer uses a short burst (optional)
+ 2	Per gun if firer uses a long burst (optional)

<u>The player controlling the target aircraft adds:</u>

+ x	Defense Factor of aircraft
- 1	For each hit previously scored on the target aircraft (even if the hit occurred in this Impulse)
+ 2	Ace Pilot defending
+ 1	Experienced Pilot defending

- If the modified Target die roll is greater than or equal to the modified Attacker die roll, then the attacker has missed
- If the modified Attacker die roll is greater than the modified Target die roll, but is not two or more times as much, one hit is scored on the target.
- If the modified Attacker die roll is at least a multiple of the modified Target die roll, a number of hits equal to the whole number multiple is scored on the target (Example: If the modified Attacker die roll is two times the modified Target die roll, two hits are scored.)

6.2 Damage Effects

Hits are recorded and applied immediately as each air unit is fired. Each aircraft is divided into six areas for damage; Engine, Crew, Fuel, Wings, Fuselage, and Rudder. Each area is rated for a certain number of hits that it can take. When the last hit for a certain area is marked, the aircraft is shot down and removed from the game (exception, see **6.2.1(b) Crew Hits**).

The number of hits for each area may be different for different aircraft types. These modifiers for each aircraft type are provided in the Notes section of the Aircraft Information Chart. The basic number of hits for each area follows:

Engine	2	Wing	3
Fuel	2	Fuselage	4
Crew	2 per crew member	Rudder	2

To determine the damaged area(s) the attacking player rolls one die for each hit scored on the target aircraft. A roll of 1 or 2 is an Engine hit, 3 is a Crew hit, 4 is a Fuel hit, 5 or 6 is a Wing hit, 7, 8 or 9 is a Fuselage hit, and 10 (0) is a Rudder hit.

6.2.1 Effects of Specific Hits

Different types and number of hits can have different effects on aircraft. There may be restrictions on aircraft performance or operation due to damage.

6.2.1(a) Engine Hits

After the first Engine hit, the aircraft uses the Damaged Engine column of the Change Chart on the Aircraft Control Card. When an Engine hit is scored, the attacking player rolls the die again to determine if an engine fire starts. If a 1, 2, or 3 is rolled the aircraft is on fire (see **6.3 Fires** for the effect of fires).

6.2.1(b) Crew Hits

If the aircraft has more than one crew, roll a second die to determine which crewmember was hit. On a 1 – 5 the pilot is hit, on 6 – 10 (0) the observer is hit. When a single hit against a Pilot is scored, no altitude changes exceeding one altitude level may be made during the Change Phase. Also, all gunnery attacks by the Pilot have a –1 modifier. The second hit on a pilot kills the pilot and the aircraft is considered shot down. When a single hit against an Observer is scored, all gunnery attacks and Observer skill rolls for the Observer have a –1 modifier. The second hit on an Observer kills the Observer, the gun controlled by the Observer may not be fired and no other Observer actions (such as artillery observation, reconnaissance, etc.) can be taken.

6.2.1(c) Fuel Hits

When a Fuel hit is scored, the attacking player rolls the die again to determine if an engine fire starts. If a 1, 2, 3, or 4 is rolled the aircraft is on fire (see **6.3 Fires** for the effect of fires).

6.2.1(d) Wing Hits

If the hit reduces the remaining Wing hits for the aircraft to one, the aircraft may not do any Tight Turn, Loop, or Roll maneuvers. The aircraft is immediately destroyed if it only has one Wing hit left and is currently marked to perform a Tight Turn, Loop, or Roll maneuver.
(Optional) If a Wing hit is scored against an aircraft during any Attack Segment, then the player controlling the aircraft must check for loss of control (see section **5.4 Losing Control of an Aircraft**).

6.2.1(e) Fuselage Hits

If the hit reduces the remaining Fuselage hits for the aircraft to one, the aircraft may not do any Loop or Roll maneuvers. The aircraft is immediately destroyed if it only has one Fuselage hit left and is currently marked to perform a Loop or Roll maneuver.

6.2.1(f) Rudder Hits

When a Rudder hit is scored, the aircraft uses the Damage Rudder section of the Maneuver Chart to determine the number of hexes to place a Maneuver Marker.

6.3 Aircraft Fires

Once started, an aircraft's fire must be extinguished during the same turn or the aircraft is destroyed. During the Change Phase, after changing altitude and/or speed, the player controlling the aircraft that is on fire rolls one die to see if the fire is put out. A modified die roll $\geq$ 9 will extinguish the fire. Separate rolls are required for each fire.

<u>The following modifiers are applied to the die roll:</u>

+2	For each altitude level dove during this Change Phase
+1	If the aircraft's pilot is Experienced
+2	It the aircraft's pilot is an Ace.

6.4 Burst Length and Jamming Guns (optional)

When using this optional rule, before rolling for the attack resolution the attacking player announces the burst length that will be used; Short, Normal, or Long. The burst length selected effects attacker modifiers and ammunition usage.

6.4.1 Combat Modifiers

If the attacking player selects a Short burst a –1 modifier is added to the attacker's die roll per firing gun. If the player selects a Long burst a +2 modifier is added to the attacker's die roll per firing gun. There are no special effects on combat if the attacking player selects a Normal burst length.

6.4.2 Gun Jams and Clearing Jams

After the attacking player rolls for combat damage, that player should look at the <u>unmodified</u> die roll. If the attacking player selected a Normal burst and the unmodified die roll is 0 (10), the attacking player's guns have jammed. If the attacking player selected a Long burst and the unmodified die roll is 7, 8, 9, or 0, the attacking player's guns have jammed. There is no chance of a gun jam with a short burst.

A pilot/observer can clear a jam the impulse after a jam occurs. Observers cannot perform any other actions while trying to clear a gun jam. Pilots can only clear a gun jam if they are flying straight.

In the Maneuver Marking segment, after all markers are placed, pilots/observers mark that they are attempting to clear a gun jam. In the following pilot/observer Attack Segment, after all other fire has occurred, the pilot/observer checks to see if they succeed in clearing the gun jam. On a modified die roll ≥7 the gun jam is cleared.

The following modifiers are applied to the die roll:

+ 4	Ace Pilot/Observer attempting to clear jam
+ 2	Experienced Pilot/Observer attempting to clear jam
- 1	Inexperienced Pilot/Observer attempting to clear jam
- 2	Green Pilot/Observer attempting to clear jam
- 1	Pilot/Observer Wounded
- 2	Observer attempting to clear jam when aircraft is in any maneuver except straight

6.4.3 Burst Length and Ammunition Usage

After checking for jams, the attacking player marks off the appropriate ammunition usage. If the attacking player selected a Long burst, mark off two ammunition factors. If the attacking player selected a Short burst and the unmodified attacker die roll is ≥ 7, the player marks off one ammunition factor, otherwise no ammunition is used. If the attacking player selected a Normal burst, mark off one ammunition factor.

6.5 Ammunition

Every time a pilot/observer fires at an enemy plane one ammunition factor is used (Note: if optional rule **6.4 Burst Length** is used, **see 6.4.3 Burst Length and Ammunition Usage** to determine the number of ammunition factors used). When all the ammunition factors for the gun(s) have been used, the gun(s) may not fire for the rest of the scenario (exception: weapons with an (R) notation may be reloaded, see 6.4.1 Reloading a weapon.).

6.5.1 Reloading a Weapon

Guns that have a (R) notation can be reloaded during the game. When the weapon is reloaded, it has its original amount of ammunition. A pilot/observer can only reload the gun that he can fire and can do no other actions while reloading. Pilots can only reload if they are flying straight.

In the Maneuver Marking segment, after all markers are placed, pilots/observers mark that they are attempting to reload. In the following pilot/observer Attack Segment, after all other fire has occurred, the pilot/observer checks to see if they succeed in reloading. On a modified die roll ≥6 the gun is reloaded.

The following modifiers are applied to the die roll:

+ 4	Ace Pilot/Observer reloading
+ 2	Experienced Pilot/Observer reloading
- 1	Inexperienced Pilot/Observer reloading
- 2	Green Pilot/Observer reloading
- 1	Reloading Pilot/Observer Wounded
- 2	Reloading Observer when aircraft is in any maneuver except straight

6.6 Crew Survival (optional)

When an aircraft is shot down, there is a chance that the pilot and observer will survive the crash. To determine if the pilot or observer survives roll a die for each crewmember and modify the roll. If the die roll is ≥ 5 the crewmember survives. If the crewmember was killed by an attack they can never survive the crash of the aircraft.

The following modifiers apply to the die roll:

- 3	If the aircraft is on fire
- 2	If pilot is wounded
- 4	From observer roll if pilot was killed
- 1	If aircraft shot down from Wing hits

7.0 Disengaging and Break-Off Checks

An aircraft can leave the map and the game by flying off the map edge or by making a successful break-off attempt. Aircraft that leave the game in either of these manners may not return to the map for the rest of the game.

Flying off the map to disengage is only allowed if playing with a static map (this is determined at the beginning of the game). If players are not playing with a static map, then the aircraft are all shifted on the map a number of hexes to keep all aircraft on the map.

Break-off checks are done in the Break-Off Phase. In order to attempt a break-off check the aircraft must not have an enemy aircraft in a tailing advantage position. Any aircraft that meets this restriction may attempt to break-off.

To determine if the break-off is successful the player controlling the aircraft that is breaking-off and any enemy player each rolls a die and the player attempting the break-off modifies it as follows:

The player attempting to break-off adds:

+ 1	If it is Game Turn 1 or 2
+ 2	If it is Game Turn 6

+ 4 If it is game turn 7, 8, or greater
- 2 If it is game turn 3, 4, or 5
+ 1 Ace Pilot
- 2 Green Pilot
+ 5 If aircraft is not spotted (optional)

- If the enemy player's die roll is greater than or equal to the modified break-off die roll, then the aircraft was unable to break-off.
- If the modified break-off die roll is greater than the enemy player's die roll, then the aircraft has broken off and is removed from the game.

8.0 Loaded Aircraft

Loaded aircraft have certain speed and maneuverability restrictions placed on them. In *Flying Circus* a loaded aircraft is any aircraft that is carrying air to ground ordnance. Aircraft that are carrying air to ground ordnance may jettison these during any Maneuver Marking Phase to lose the maneuver and speed restrictions.
Loaded aircraft have their maximum and dive speeds reduced by one (exception: an aircraft may always move at speed one). Also, they may not do any Tight Turn, Loop, or Roll maneuvers and all other maneuvers have one added to the number of hexes needed to complete the maneuver.

9.0 Pilot and Observer Quality

There are five levels of pilot and observer quality in *Flying Circus*: Green, Inexperienced, Average, Experienced, and Ace. Each pilot and observer quality type and its effects are explained below:

9.1 Green:

A green pilot or observer is one that has minimal training and little to no experience in an aircraft. Green pilots must check for loss of control of their aircraft any time that they do a Tight Turn or Loop Maneuver. When trying to spot, green pilots and observers have a –2 modifier for all attempts. When firing, green pilots and observers have a -2 modifier for all shots. Green observers have a –2 modifier for all observer skill checks.

9.2 Inexperienced:

This pilot or observer has standard training, but no advanced training and little to no experience. Inexperienced pilots must check for loss of control of their aircraft any time they do a Tight Turn. Inexperienced pilots and observers have no special modifiers for attacks or spotting.

9.3 Average:

This pilot or observer has standard training, some advanced training and some experience. Average pilots and observers have no special modifiers for attacks or spotting.

9.4 Experienced:

This pilot or observer has a high level of experience, with lots of advanced training and some combat time. When trying to spot, experienced pilots and observers get a +2 modifier for all spotting attempts. When firing, experienced pilots and observers get a +2 modifier for all shots. When fired at, experienced pilots get a +1 defense modifier. Experienced observers have a +1 modifier for all observer skill checks.

9.5 Ace:

This pilot or observer has a high level of experience, lots of advanced training, and several combat kills. When trying to spot, ace pilots and observers get a +3 modifier for all spotting attempt. When firing, ace pilots and observers get a +4 modifier for all shots. When fired at, ace pilots get a +2 defense modifier. Ace observers have a +2 modifier for all observer skill checks.

10.0 Special Aircraft Characteristics (optional)

World War I had several aircraft with special characteristics that aren't covered by the basic rules. Aircraft with these characteristics are shown in the Notes section of the Aircraft Information Chart.

10.1 Difficult Handling Aircraft

Aircraft in this category were particularly tough for pilots to handle and killed some inexperienced pilots. Aircraft in this category have a +2 modifier to all loss of control and recovery checks (see rule **5.4 Losing Control of an Aircraft**). Additionally, if a Green pilot conducts a Turn or Roll maneuver, that pilot must conduct a loss of control check as if he had done a Tight Turn maneuver.

10.2 Fragile Aircraft

Aircraft in this category had structural weaknesses that allowed the aircraft to incur damage during steep dives. When an aircraft in this category dives 3 or 4 levels during the change phase or is in a spin, the player controlling the aircraft rolls a die. If the result is >7 the aircraft takes 1 wing hit. If the aircraft's pilot is Experienced or an Ace, there is a –2 modifier to the die roll.

10.3 Good Climbing Aircraft

Aircraft in this category had a substantial rate of climb without as large of a speed loss as other

aircraft. When an aircraft in this category climbs 1 level it uses the No Change row on the Engine Table.

11.0 Pilot/Observer Special Abilities (optional)

Below is a list of pilot and observer skills. A P after the skill indicates that a pilot may have this skill. An O after the skill indicates that an observer may have this skill.

Natural Flyer (P) – Once per scenario, may make a maneuver at 1 hex less than normal, but a minimum of 1 hex. Subtract 1 from all Loss of Control die rolls. Gets a +2 modifier when attempting to survive a shoot down.

Situational Awareness (P, O) – Pilots with this skill will always place their maneuver marker last (even when being tailed), unless being tailed by an Ace pilot or another pilot with a Situational Awareness skill. All crewmen with this skill keep track of all spotted enemy planes, even when firing at an enemy plane.

Sharpshooter (P, O) – After hitting a target, this player may change the damage die roll by ±1. (Example: The firing player has a Sharpshooter skill, after getting a hit the firing player rolls the damage die roll and gets a 7 which is a Fuselage hit. The target only has one wing hit left, so the firing player subtracts one from the die making it a 6 for a Wing hit to shoot down the target.)

Eagle Eye (P, O) – Gets a +2 die modifier when attempting to spot enemy aircraft and keeps track of all spotted enemy planes, even when firing at an enemy plane.

Marksman (P, O) – Crewmen with this skill roll a d10 after an attack, if the roll is ≥8 (no modifiers) the crew used one less ammo in the attack.

Mechanic (P, O) – Pilots with this skill treat undamaged engines as High Power. Also, all crewmen get a modifier for gun un-jamming attempts.

Perfect Timing (P) – Pilot automatically gets an additional +1 to all defense die rolls when fired upon.

Good Communicator (P, O) – This crewman passes along sighting information to all friendly aircraft within 2 hexes.

Observer Skill (O) – Observer gets a +1 to all observer mission checks.

Ground Attack Skill (P, O) – This crewman gets a +1 to all ground attacks (strafes and bomb attacks).

Strong Constitution (P, O) – This crewman may take 1 extra hit (3 vice 2) before being killed and is not counted as wounded until he takes a second hit.

Balloon Buster (P, O) – This crewman gets an extra +2 for all balloon or Zeppelin destruction rolls.

Just Lucky (P, O) – This crewman may re-roll any die roll (or force an opposing player to re-roll a die roll) once per scenario.

11.1 Random Pilot/Observer Generation

When creating a scenario players may randomly generate Pilot and Observer Experience levels and Skills.

Random Pilot/Observer Experience Table

Die	Early War (9/14 – 6/16)	Mid War (7/16 – 12/17)	Late War (1918), German	Late War (1918) British	Late War (1918) Other
1	Green	Green	Green	Green	Green
2	Green	Green	Green	Inexp	Green
3	Inexp	Inexp	Inexp	Inexp	Inexp
4	Inexp	Inexp	Inexp	Avg	Inexp
5	Inexp	Avg	Avg	Avg	Inexp
6	Avg	Avg	Avg	Avg	Avg
7	Avg	Avg	Avg	Avg	Avg
8	Avg	Exp	Avg	Exp	Avg
9	Exp	Exp	Exp	Exp	Exp
0	Ace	Ace	Ace	Ace	Ace

Skill Determination Table

Die	Green	Inexp	Avg	Exp	Ace
1	No	No	No	No	No
2	No	No	No	No	No
3	No	No	No	No	No
4	No	No	No	No	No
5	No	No	No	No	Yes
6	No	No	No	Yes	Yes
7	No	No	Yes	Yes	Yes
8	No	No	Yes	Yes	Yes
9	No	Yes	Yes	Yes	Yes
0	Yes	Yes	Yes	Yes	Yes*

* = Roll twice on the Random Skill Table.

Random Skill Table

Die	Pilot Skill	Observer Skill
1	Natural Flyer	Situational Awareness
2	Sit. Awareness	Sharpshooter
3	Sharpshooter	Marksman
4	Marksman	Mechanic
5	Mechanic	Observer Skill
6	Perfect Timing	Observer Skill
7	Ground Attack	Ground Attack
8	Strong Constitution	Strong Constitution
9	Balloon Buster	Balloon Buster
0	Just Lucky	Just Lucky

12.0 Spotting (optional)

During the game it is assumed that each side knows that the other side has aircraft in the area and spotting is assumed to occur without any special rules. However, in some cases players may want to use the spotting rules to add realism or show how important it is to know the location of the enemy. It will require extra bookkeeping for players to keep track of which aircraft are spotted.

Spotting attempts are made during the Spotting Segment. Each pilot and observer may only attempt to visually spot 1 enemy aircraft during each Spotting Segment. The maximum range for visual spotting is 10 hexes. The range is equal to the number of hexes the spotting aircraft is from the target, plus the difference in altitude between the two aircraft. The player attempting to spot declares which enemy aircraft he will try to spot, then each player rolls a die to check for a successful visual spot. The die roll for each player is modified as follows:

<u>The player attempting to spot (Spotter) adds:</u>

+ 4 Ace Pilot/Observer
+ 2 Experienced Pilot/Observer
- 2 Green Pilot/Observer
+2 Target is large aircraft
- 2 if the target aircraft is at altitude 0

<u>The player controlling the target aircraft (Target) adds:</u>

+ x Range between aircraft

- If the modified Target die roll is greater than or equal to the modified Spotter die roll, then the target aircraft has not been spotted.
- If the modified Spotter die roll is greater than the modified Target die roll, then the target aircraft is spotted.

An aircraft may have a visual spot on any number of enemy aircraft. Pilots and observers in the same aircraft share all visual spots with each other. Generally, friendly aircraft may not share visual spots, but "wingmen" may share visual contacts. At the beginning of the game a pair of aircraft (of the same type) may be designated as "wingmen". These two aircraft may share visual contact information as long as both aircraft are 2 or fewer hexes from each other. If they move outside of 2 hexes they lose the ability to share contacts, but still retain all current contacts. The wingmen relationship is re-established when the aircraft move within 2 hexes of each other.

Visual spots are lost in the following situations:

- If the enemy aircraft moves out of the 10 hex range for spotting.
- A pilot or observer fires at a target, the pilot or observer loses the visual spot of all enemy aircraft, except the target of the attack. (Exception: Pilot/observer in the same plane and wingmen maintain spots as described above)
- If an aircraft goes into a spin it loses all visual spots.

13.0 Generic Missions

Below is a list of generic missions that can be used to generate scenarios for *Flying Circus*. Each mission gives a general description of the mission and the conditions under which the mission is considered successful.

Line Patrol: Patrolling for enemy aircraft over the trenches. Single or two-seat aircraft may carry out this mission. The mission is considered a success if all enemy aircraft are shot down, break-off, or forced off the board.

Artillery Observation: Acting as an observer for long-range artillery fire. Two-seat aircraft carry out this mission. The observing aircraft must establish contact with the artillery (roll 1d10, on a roll $\geq$6 contact is established, this can be modified by an observer skill) and maintain contact for 2 + 1d6/2 (round down) turns. The observer cannot do any actions during a turn when observing for artillery, except spotting for enemy aircraft, and the aircraft with the observer may not do any Tight Turns, Loops, or Rolls. If the observer does any other action or the aircraft does a Tight Turn, Loop, or Roll the observer must start at the beginning.

Contact Patrol: Done during an Offensive, aircraft are looking for positions of friendly troops. Single or two-seat aircraft may carry out this mission. Prior to the start of the scenario each side should place 1d10 troop stands anywhere on the board. The contact patrol aircraft must attempt to identify the troop

stands by flying over the stand at altitude 0 or 1. When the aircraft is over the stand, roll 1d10. On a roll ≥5 (may be modified by an observer skill) the troops are identified. Roll 1d6 to determine which side the troops belong to. If the result is odd it is enemy troops, even is friendly troops. The mission is considered a success if all troop stands are identified. Ground troops fire back with a strength of 1 at enemy aircraft or if the stand is not identified.

Frontline Reconnaissance: Observing and photographing enemy positions on the frontline. Single or two-seat aircraft may carry out this mission. Prior to the start of a scenario the player controlling the reconnaissance aircraft must designate 1d6/2 enemy target hexes (round down, but a minimum of 1). The reconnaissance aircraft must fly over all the target hexes at altitude level 2 – 4 and take a reconnaissance photo. The aircraft must have a straight maneuver over the target hex and the observer can do no other actions besides taking the photograph. The observer successfully takes a photo on a roll of ≥5 on 1d10 (may be modified by an observer skill). Photo attempts are conducted in the Observer Attack Segment after all other observers have fired. The mission is considered a success if the reconnaissance aircraft takes a photograph of all target hexes and exits the map without be shot down.

Deep Reconnaissance: Observing and photographing enemy positions and movement behind the front. Two-seat aircraft may carry out this mission. Prior to the start of a scenario the player controlling the reconnaissance aircraft must designate 1d6/2 enemy target hexes (round down, but a minimum of 1). The reconnaissance aircraft must fly over all the target hexes at altitude level 2 – 4 and take a reconnaissance photo. The aircraft must have a straight maneuver over the target hex and the observer can do no other actions besides taking the photograph. The observer successfully takes a photo on a roll of ≥5 on 1d10 (may be modified by an observer skill). Photo attempts are conducted in the Observer Attack Segment after all other observers have fired. The mission is considered a success if the reconnaissance aircraft takes a photograph of all target hexes and exits the map without being shot down.

Bombing: Attacking enemy positions. This may be trenches or positions behind the lines. Single or two-seat aircraft may carry out this mission. Prior to the start of a scenario the player controlling the attacking aircraft must designate 1d6/2 enemy target hexes (round down, but a minimum of 1). Single-seat aircraft may only attack once per scenario, Two-seat aircraft may attack three times per scenario. Two-seat attack aircraft must fly over all the target hexes at altitude level 2 to attack the hex. The aircraft must have a straight maneuver over the target hex and the observer can do no other actions besides dropping bombs. The observer successfully attacks the hex on a roll of ≥7 on 1d10 (may be modified by an observer skill). Bombing attempts are conducted in the Observer Attack Segment after all other observers have fired. Single-seat aircraft must fly over all the target hexes at altitude level 0 or 1 to attack the hex. The aircraft must have a straight maneuver over the target hex and the pilot cannot fire guns in the same impulse that bombs are dropped. The pilot successfully attacks the hex on a roll of ≥6 on 1d10. Subtract 2 from the die roll for every level the pilot dove during the previous Change Phase. Pilot bombing attempts are conducted in the Pilot Attack Segment after all other pilots have fired. The mission is considered a success if half the target hexes (rounded up) are successfully attacked.

Trench-Strafing: Attacking enemy trenches. Single or two-seat aircraft may carry out this mission. Prior to the start of a scenario the player controlling the attacking aircraft must designate 1d6/2 enemy trench target hexes (round down, but a minimum of 1). Attacks are carried out in the appropriate Attack Segment in the same manner as normal gun attacks. Trench hexes have a defense factor of 4. The mission is considered a success if the attacker scores 4 or more hits on the trenches.

Balloon Busting: Attacking enemy observation balloons. Single or two-seat aircraft may carry out this mission. Prior to the start of a scenario the player controlling the Balloon and defenses rolls 1d6/2 and places that number of observation balloons at Altitude level 2. Balloons have a defense of 3 and can take 5 hits. For each hit the attacker rolls a die, if the result is 1, the balloon explodes and is destroyed. Aircraft adjacent to an exploding balloon take 1 random hit. The mission is considered a success if one balloon is shot down.

Escort: Escorting friendly aircraft on a mission. Single or two-seat aircraft may carry out this mission. The mission is considered a success if the friendly aircraft that are being escorted are able to complete their mission.

Offensive Patrol: Patrolling for enemy aircraft behind enemy lines. Single or two-seat aircraft may carry out this mission. The mission is considered a success if one enemy aircraft is shot down and enemy losses exceed friendly losses.

Charts and Tables (page 1 of 3)

Loss of Control Information (Rule 5.4)

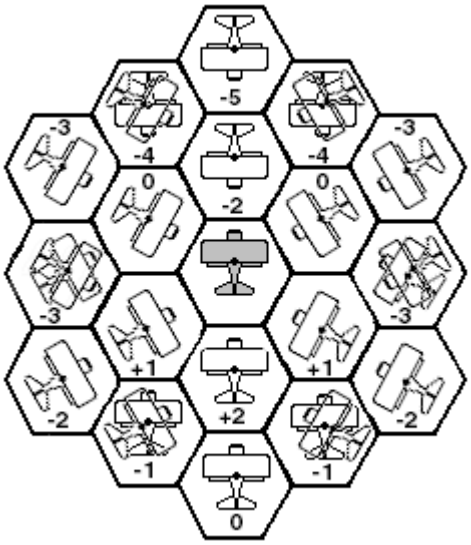
Condition	Loss of Control Checks		Recovery Checks	
Tight Turn:	**Safe**	**OOC**	**Recovered**	**OOC**
Green	1 – 4	5 – 10	1 - 4	5 - 10
Inexperienced	1 – 6	7 – 10	1 - 6	7 - 10

Loop	**Safe**	**OOC**	**Recovered**	**OOC**
Green	1 – 4	5 – 10	1 - 4	5 - 10

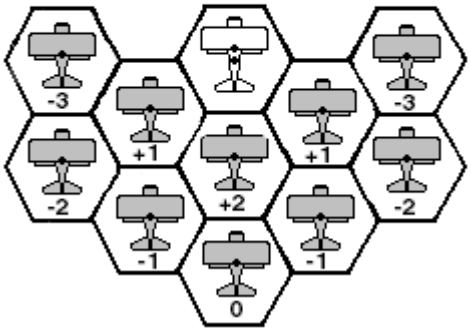
0 Speed	**Safe**	**OOC**	**Recovered**	**OOC**
Green	1 – 4	5 – 10	1 - 4	5 - 10
Inexperienced	1 – 6	7 – 10	1 - 6	7 - 10
Average/ Experienced/ Ace	1 – 8	9 – 10	1 - 8	9 - 10

Combat Firing Modifiers (Rule 6.1)

+ x	Pilot/Observer Gun Attack Value (see specific Aircraft Control Card for this number)	- 2	Firing aircraft has Turn or Roll marker out (observer only)
± x	The number shown on the appropriate Gun Firing Position Diagram below	- 3	Firing aircraft has Tight Turn or Loop marker out (observer only)
+ 4	Ace Pilot/Observer firing	- 1	Per gun if firer uses a short burst (optional)
+ 2	Experienced Pilot/Observer firing	+ 2	Per gun if firer uses a long burst (optional)
+ 2	Target is a Large Aircraft	+ 4	If firing aircraft is not spotted (optional)
- 1	Firing Pilot/Observer Wounded	+ x	Defense Factor of aircraft (Target only)
- 2	Green Pilot/Observer firing	- 1	For each hit previously scored on the target aircraft (Target only)
- 2	Target aircraft is one altitude level higher or lower	+ 2	Ace Pilot defending (Target only)



Forward Gun Firing Position Chart



Rear Gun Firing Position Chart

Target is the gray aircraft. For rear firing guns the target can be facing in any direction.

Charts and Tables (page 2 of 3)

Damage Location (Rule 6.2)

Die Roll	Damage Location	Die Roll	Damage Location
1, 2	Engine	5, 6	Wing
3	Crew	7, 8, 9	Fuselage
4	Fuel	10	Rudder

Aircraft Fires (Rule 6.3)

A modified die roll ≥ 9 is needed to extinguish the fire.

Fire Roll Modifiers

+2	For each altitude level dove during this Change Phase	+1	If the aircraft's pilot is Experienced
+2	It the aircraft's pilot is an Ace.		

Gun Jams and Clearing Jams (Rule 6.4.2)

Attacking player guns are jammed if: Long Burst and die roll = 7, 8, 9, or 0, Normal Burst and die roll = 0

On a modified die roll ≥7 the gun jam is cleared.

Clearing Jam Modifiers

+ 4	Ace Pilot/Observer clearing jam	+ 2	Experienced Pilot/Observer clearing jam
- 1	Inexperienced Pilot/Observer clearing jam	- 2	Green Pilot/Observer clearing jam
- 1	Pilot/Observer Wounded	- 2	Observer clearing jam when aircraft is in any maneuver except straight

Reloading (Rule 6.5.1)

On a modified die roll ≥6 the gun is reloaded.

Reload Modifiers

+ 4	Ace Pilot/Observer reloading	+ 2	Experienced Pilot/Observer reloading
- 1	Inexperienced Pilot/Observer reloading	- 2	Green Pilot/Observer reloading
- 1	Reloading Pilot/Observer Wounded	- 2	Reloading Observer when aircraft is in any maneuver except straight

Crew Survival (Rule 6.6)

Roll for each crewmember. If the modified die roll is ≥ 5 the crewmember survives. If the crewmember was killed by an attack they can never survive the crash of the aircraft.

Survival Modifiers

- 3	If the aircraft is on fire	- 2	If pilot is wounded
- 4	From observer roll if pilot was killed	- 1	If aircraft shot down from Wing hits

Break Off Attempt Modifiers (Rule 7.0)

+ 1	If it is Game Turn 1 or 2	+ 2	If it is Game Turn 6
+ 4	If it is game turn 7, 8, or greater	- 2	If it is game turn 3, 4, or 5
+ 1	Ace Pilot	- 2	Green Pilot
+ 5	If aircraft is not spotted (optional)		

Spotting Modifiers (Rule 11.0)

	The player attempting to spot (Spotter) adds		The player controlling the target aircraft adds
+ 4	Ace Pilot/Observer	+ x	Range between aircraft
+ 2	Experienced Pilot/Observer		
- 2	Green Pilot/Observer		
+2	Target is large aircraft		
- 2	if the target aircraft is at altitude 0		

Charts and Tables (page 3 of 3)

Maneuver Chart

Maneuver Code	Speed 1	2	3	4	5	6
Red Circle (RC)	1	1	1	1	2	2
White Diamond (WD)	1	1	1	2	2	3
Blue Square (BS)	1	1	2	3	3	4
Green Shield (GS)	1	2	2	3	4	4
Tan Triangle (TT)	2	2	2	3	4	5

Engine Chart

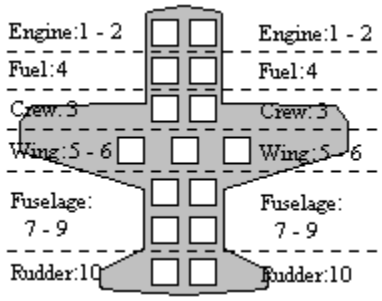
	Engine Power Type			
Altitude Change	**Poor (P)**	**Normal (N)**	**High (H)**	**Damaged**
Climb 2	**P**	-2 through -4	-1 through -4	**P**
Climb 1	-2 through -3	-1 through -3	0 through -3	-2 through -3
Level (No Change)	-2 through +1	-2 through +1	-2 through +2	0 through -2
Dive 1 or 2	-1 through +1	-1 through +2	-1 through +3	-1 through +1
Dive 3 or 4	0 through +2	0 through +3	0 through +4	**P**

Impulse Chart

	Speed					
Impulse	1	2	3	4	5	6
1	-	-	X	X	X	X
2	-	X	-	-	X	X
3	-	-	X	X	X	X
4	X	-	-	X	-	X
5	-	X	X	-	X	X
6	-	-	-	X	X	X
Change Phase						

A/C Type # SPAD XIII **Pilot _____**

Level Speed = 5 **Dive Speed = 6**

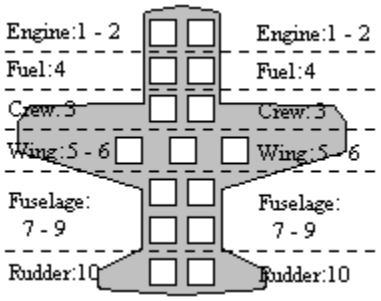


Turn	1	2	3	4
Speed				
Altitude				
Turn	5	6	7	8
Speed				
Altitude				

Fwd Ammo = ☐☐☐☐☐ **Rear Ammo = ☐☐☐☐☐**

A/C Type # SPAD XIII **Pilot _____**

Max. Altitude = 6



Turn	1	2	3	4
Speed				
Altitude				
Turn	5	6	7	8
Speed				
Altitude				

Fwd Ammo = ☐☐☐☐☐ **Rear Ammo = ☐☐☐☐☐**

Speed

Maneuver	1	2	3	4	5	6
Straight	1	1	1	1	1	1
Turn	1/1	1/1	1/2	2/3	2/3	3/4
Tight Turn	1/1	1/1	1/2	2/3	2/3	3/4
Roll	1/1	1/2	2/2	3/3	3/4	4/4
Loop	1/1	1/2	2/2	3/3	3/4	4/4

Normal Rudder/Damaged Rudder

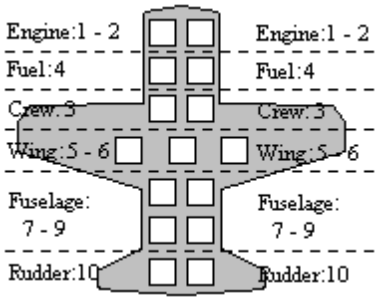
Fwd Gunnery = 6
Rear Gunnery =
Defense = 4
Engine = H

Engine

Altitude Change	High	Damaged
Climb 2	-1 to -4	P
Climb 1	0 to -3	-2 to -3
No Change	-2 to +2	0 to -2
Dive 1 or 2	-1 to +3	-1 to +1
Dive 3 or 4	0 to +4	P

A/C Type # Fokker DVII **Pilot _____**

Level Speed =5 **Dive Speed = 6**

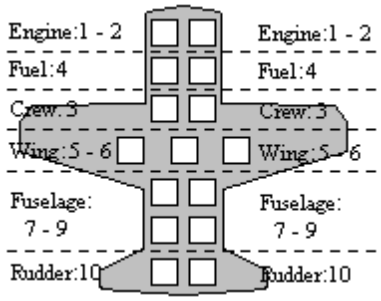


Turn	1	2	3	4
Speed				
Altitude				
Turn	5	6	7	8
Speed				
Altitude				

Fwd Ammo = ☐☐☐☐☐ **Rear Ammo = ☐☐☐☐☐**

A/C Type # Fokker DVII **Pilot_____**

Max. Altitude = 6



Turn	1	2	3	4
Speed				
Altitude				
Turn	5	6	7	8
Speed				
Altitude				

Fwd Ammo = ☐☐☐☐☐ **Rear Ammo = ☐☐☐☐☐**

Speed

Maneuver	1	2	3	4	5	6
Straight	1	1	1	1	1	1
Turn	1/1	1/1	1/2	2/3	2/3	3/4
Tight Turn	1/1	1/1	1/2	2/3	2/3	3/4
Roll	1/1	1/2	2/2	3/3	3/4	4/4
Loop	1/2	2/2	2/2	3/3	4/4	4/5

Normal Rudder/Damaged Rudder

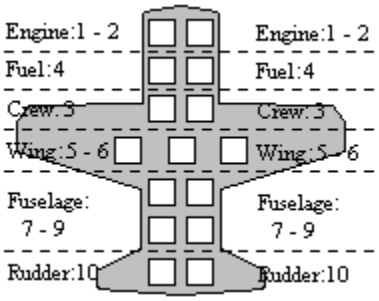
Fwd Gunnery = 6
Rear Gunnery =
Defense = 4
Engine = H

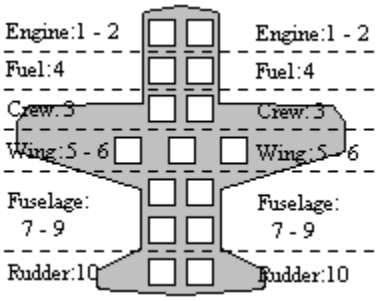
Engine

Altitude Change	High	Damaged
Climb 2	-1 to -4	P
Climb 1	0 to -3	-2 to -3
No Change	-2 to +2	0 to -2
Dive 1 or 2	-1 to +3	-1 to +1
Dive 3 or 4	0 to +4	P

A/C Type # ____________ **Pilot** __________ **A/C Type #** ____________ **Pilot** __________

Level Speed = **Dive Speed =** **Max. Altitude =**





Turn	1	2	3	4
Speed				
Altitude				
Turn	5	6	7	8
Speed				
Altitude				

Fwd Ammo = ☐☐☐☐☐ **Rear Ammo =** ☐☐☐☐☐

Turn	1	2	3	4
Speed				
Altitude				
Turn	5	6	7	8
Speed				
Altitude				

Fwd Ammo = ☐☐☐☐☐ **Rear Ammo =** ☐☐☐☐☐

Speed

Maneuver	1	2	3	4	5	6
Straight						
Turn						
Tight Turn						
Roll						
Loop						

Normal Rudder/Damaged Rudder

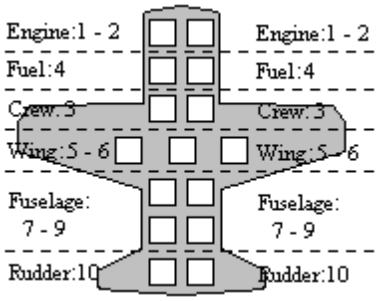
Fwd Gunnery =
Rear Gunnery =
Defense =
Engine =

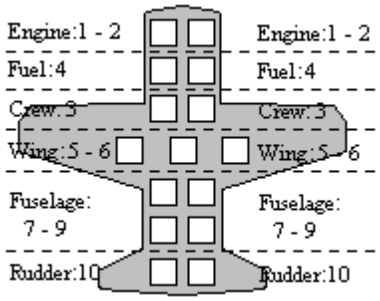
Engine

Altitude Change		Damaged
Climb 2		P
Climb 1		-2 to -3
No Change		0 to -2
Dive 1 or 2		-1 to +1
Dive 3 or 4		P

A/C Type # ____________ **Pilot** __________ **A/C Type #** ____________ **Pilot**__________

Level Speed = **Dive Speed =** **Max. Altitude =**





Turn	1	2	3	4
Speed				
Altitude				
Turn	5	6	7	8
Speed				
Altitude				

Fwd Ammo = ☐☐☐☐☐ **Rear Ammo =** ☐☐☐☐☐

Turn	1	2	3	4
Speed				
Altitude				
Turn	5	6	7	8
Speed				
Altitude				

Fwd Ammo = ☐☐☐☐☐ **Rear Ammo =** ☐☐☐☐☐

Speed

Maneuver	1	2	3	4	5	6
Straight						
Turn						
Tight Turn						
Roll						
Loop						

Normal Rudder/Damaged Rudder

Fwd Gunnery =
Rear Gunnery =
Defense =
Engine =

Engine

Altitude Change		Damaged
Climb 2		P
Climb 1		-2 to -3
No Change		0 to -2
Dive 1 or 2		-1 to +1
Dive 3 or 4		P

Flying Circus, version 1.2
12/11/01 By David Schueler

Aircraft Information Chart

Name	Fwd Gun	Fwd Ammo	Rear Gun	Rear Ammo	Max Alt	Def	Eng Type	Lvl Spd	Dive Spd	Loop	Roll	Turn	Notes
Breguet 14	3	4	1	2(R)	5	3	N	4	5	-	TT	GS	1 fwd gun, 1 rear gun, 3 reloads, +1 Wing hit, 2 crew
Hanriot HD.1	3	4	-	-	6	3	N	4	5	GS	BS	WD	1 fwd gun
Morane-Saulnier A1	6	5	-	-	5	3	H	4	6	GS	BS	WD	2 fwd guns, Fragile Aircraft
Nieuport 11	2	2(R)	-	-	4	3	N	3	4	GS	WD	WD	1 fwd gun, 2 reloads, -1 Wing hit, Fragile Aircraft
Nieuport 17	3 2	4 2(R)	-	-	5	3	N	3	4	GS	BS	WD	1 fwd gun, British variant uses Lewis gun with 3 reloads, Fragile Aircraft
Nieuport 28	6	5	-	-	5	3	N	4	5	BS	BS	WD	2 fwd guns, Fragile Aircraft
SPAD VII	3	4	-	-	5	4	H	3	5	TT	GS	WD	1 fwd gun
SPAD XIII	6	5	-	-	6	4	H	5	6	BS	BS	WD	2 fwd guns
Be-2c	-	-	1	2(R)	3	2	P	2	4	-	TT	GS	1 rear gun 1 reload, +1 Wing hit, 2 crew
Be-2e	-	-	1	2(R)	4	3	N	3	4	-	TT	GS	1 rear gun 2 reloads, +1 Wing hit, 2 crew
Bristol F2B	3	4	1	2(R)	5	4	H	3	5	TT	GS	BS	1 fwd gun, 1 rear gun, 3 reloads, +1 Wing, +1 Fuselage hits, 2 crew, some had 2 rear guns (Rear Gun = 4)
DH-2	2	2(R)	-	-	4	3	N	3	4	GS	BS	BS	1 fwd gun, 2 reloads, -1 Fuselage hit
DH-4	3	4	1	2(R)	6	4	N	3	5	-	GS	GS	1 fwd gun, 1 rear gun, 3 reloads, +1 Wing, +1 Fuselage hits, 2 crew

Name	Fwd Gun	Fwd Ammo	Rear Gun	Rear Ammo	Max Alt	Def	Eng Type	Lvl Spd	Dive Spd	Loop	Roll	Turn	Notes
Fe-2b	1	2(R)	-	-	4	3	N	2	4	-	TT	GS	1 fwd gun, 2 reloads, +1 Wing hit, 2 crew, observer fires Fwd Gun
Fe-2d	1	2(R)	-	-	5	3	N	3	4	TT	GS	BS	1 fwd gun, 3 reloads, +1 Wing hit, 2 crew, observer fires Fwd gun, some armed with a pilot fwd gun (add Fwd Gun = 3)
Re-8	3	4	1	2(R)	4	3	N	3	4	-	TT	GS	1 fwd gun, 1 rear gun, 2 reloads, +1 Wing hit, 2 crew
SE-5	3+2	5/2(R)	-	-	5	3	H	5	6	GS	BS	BS	2 fwd guns, has Lewis gun on upper wing. May be fired with Vickers gun. 2 reloads
Sopwith Camel	6	5	-	-	5	3	H	4	5	BS	WD	WD/RC	2 fwd guns, RC used for right turns, Difficult Handling Aircraft
Sopwith Dolphin	6	5	-	-	5	4	H	5	6	GS	WD	WD	2 fwd guns
Sopwith Pup	3	4	-	-	5	3	N	3	4	GS	BS	WD	1 fwd gun
Sopwith Snipe	6	5	-	-	5	4	H	5	6	BS	BS	WD/RC	2 fwd guns, RC used for right turns, Difficult Handling Aircraft
Sopwith Strutter	3	4	1	2(R)	4	4	N	3	4	-	TT	GS	1 fwd gun, 1 rear gun, 2 reloads, 2 crew
Sopwith Triplane	3	4	-	-	6	3	N	3	4	GS	WD	RC	1 fwd gun, Good Climbing Aircraft
Albatros DII	6	5	-	-	5	3	N	3	5	GS	BS	BS	2 fwd guns
Albatros DIII	6	5	-	-	5	3	N	3	5	GS	BS	WD	2 fwd guns, Fragile Aircraft
Albatros DV	6	5	-	-	6	3	N	4	5	GS	BS	WD	2 fwd guns, Fragile Aircraft

Name	Fwd Gun	Fwd Ammo	Rear Gun	Rear Ammo	Max Alt	Def	Eng Type	Lvl Spd	Dive Spd	Loop	Roll	Turn	Notes
Fokker DrI	6	5	-	-	5	3	N	3	5	GS	WD	RC	2 fwd guns, Good Climbing Aircraft, Difficult Handling Aircraft
Fokker DVII	6	5	-	-	6	4	H	5	6	GS	BS	WD	2 fwd guns
Fokker DVIII	6	5	-	-	5	3	H	4	6	TT	BS	WD	2 fwd guns
Fokker EIII	3	5	-	-	4	3	P	3	4	TT	GS	BS	1 fwd gun
Halberstadt CLII	3	5	2	5	5	3	N	3	5	-	GS	GS	1 fwd gun, 1 rear gun, +1 Wing, +1 Fuselage hits, 2 crew
Hannover CLIII	3	5	2	5	6	3	N	3	5	-	GS	BS	1 fwd gun, 1 rear gun, +1 Wing, +1 Fuselage hits, 2 crew
Pflaz DIII	6	5	-	-	5	3	N	3	5	TT	BS	BS	2 fwd guns
Pflaz DXII	6	5	-	-	5	4	H	4	5	GS	BS	WD	2 fwd guns
Roland CII	3	4	2	5	4	3	N	3	4	-	TT	GS	1 fwd gun, 1 rear gun, +1 Fuselage hits, 2 crew
Siemans-Schuckert DIII/IV	6	5	-	-	6	4	H	4	6	BS	BS	WD	2 fwd guns, Good Climbing Aircraft