TSR's classic

DAWN PATROL™

Role Playing Game of WW I air combat

TSR™
The Game Wizards

For 2 or more Players, Ages 12 and up.

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DAWN PATROL™

Aerial Combat Role Playing Game

by Mike Carr

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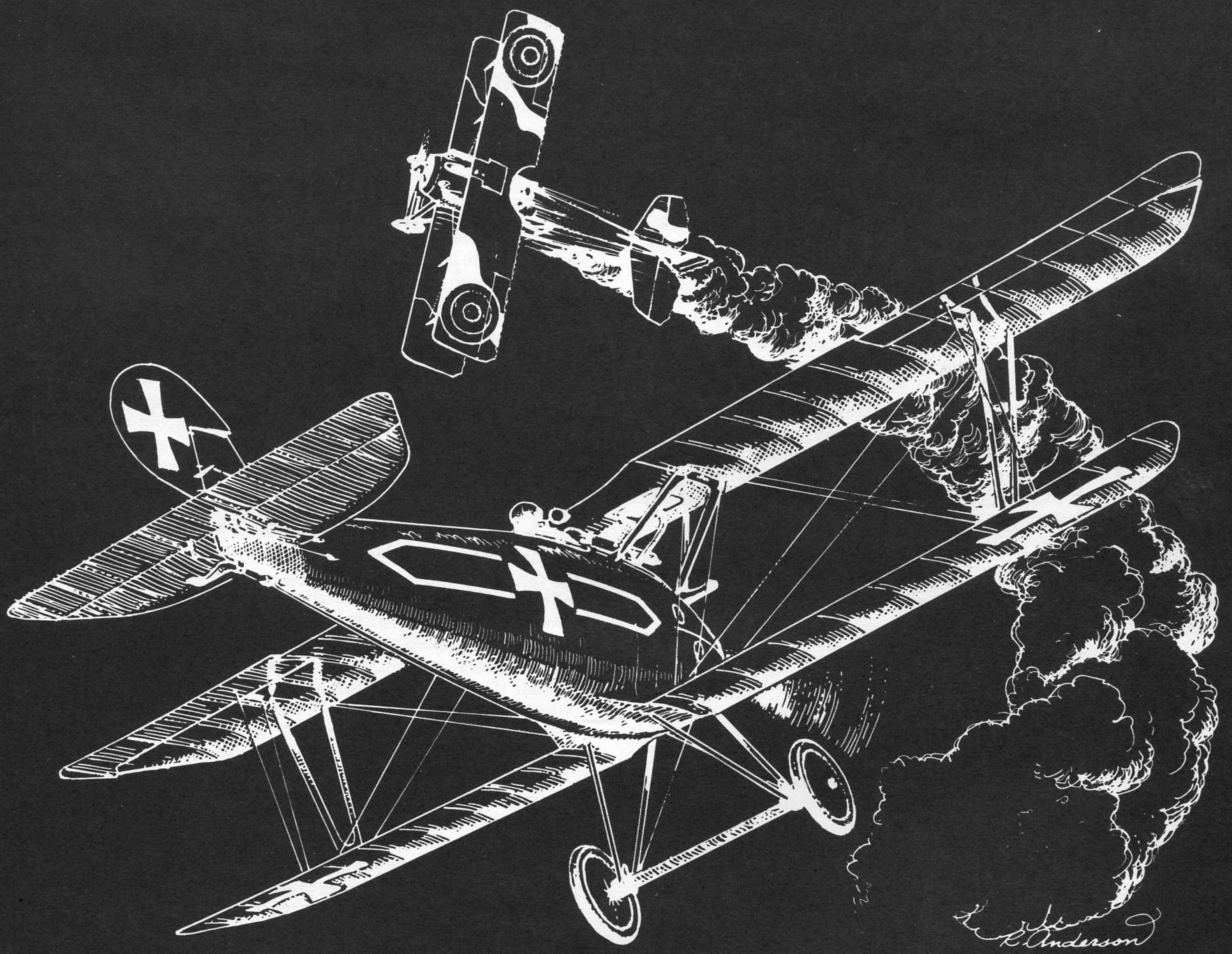

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INTRODUCTION

DAWN PATROL™ games recreate the thrilling dogfights and air battles fought during the last half of World War I. Each player pilots an airplane in a fiery test of his or her skill and nerve, thousands of feet above the trenches. Players can relive the excitement of flying with Richthofen's Flying Circus or the Lafayette Escadrille. Pilots who win in combat can improve their skills as they gain experience.

Unlike most adventure games, a **DAWN PATROL™** game can be played by any number of players; the rules cover one-on-one duels, squadron vs. squadron melees and everything in between. Included in the game are aircraft from 1917 and 1918 to enable the players to recreate dogfights from those years with historical and technical accuracy. Players can set up their own battles or use the historical scenarios described in the rule book. Rules for both basic and advanced games allow play at any level of complexity the players want.

Now it's time to muffle yourself against the chill morning air, check your guns and instruments and strap yourself into the cockpit; enemy patrols are pushing farther beyond the front lines, and the squadron flies at dawn!

How To Use This Book

All the rules needed to play a basic **DAWN PATROL™** game are explained in the BASIC RULES section of this book—everything after the basic rules is supplementary. This arrangement makes learning the game easy for new players and provides a quick reference for experienced players.

The game is divided into six sections, the latter three a part of the pull-out cardstock section:

1. BASIC RULES explaining the mechanics of play.
2. ADVANCED RULES to make the game more comprehensive and realistic.
3. APPENDICES with additional information.
4. GAME SCENARIOS, a selection of ready-to-play air battles.
5. ROLE-PLAYING ASPECTS describing pilots, their careers and experience bonuses.
6. AIRCRAFT SPECIFICATIONS giving performance information on the different aircraft used in the game.

Game Inventory

A complete **DAWN PATROL** game should include:

One 32-page rulebook with 32 pages of charts and cards to be removed before play
Two full-color sheets of aircraft counters, one Allied and one German
One full-color game map
Two six-sided dice

(Thirty-two pages of reference charts and play aids are bound into the center of this rulebook. To remove them, carefully bend up the staples securing the pages, remove the central section and bend the staples back down and cut apart where noted.)

BASIC RULES

The names of the characters used herein are fictitious and do not refer to any persons living or dead. Any descriptions including similarities to persons living or dead is merely coincidental.

Object of the Game

The object of the game is to skillfully outmaneuver your opponents while trying to shoot down enemy planes. The victory conditions will vary with the scenario being played, but players who survive and fly their planes back to their airfields usually win. Sometimes, though, the winner will be the player who accomplishes his or her mission, who shoots down more planes than the enemy or who simply manages to escape with his or her plane.

Preparation

Open the game board on a flat surface. Separate all the counters and place them near the board (you will need only a few counters for any game). Make several copies of the mission log sheet included in the **DAWN PATROL™** book. Now the players must choose a scenario to play (from the section SCENARIOS), divide into two teams and select their planes. Each player then must fill out a mission log sheet. The mission log is used to keep track of a plane's speed, altitude, damage and other information during the game and serves as a permanent record of the pilot's flight history after the game. Also, writing the plane's performance specificiations on the mission log is handier than referring back to the aircraft reference card during the game. If a log is not available, use a sheet of paper.

Before starting to play, all players must know how to read their planes' aircraft reference cards and how to move, maneuver, shoot and resolve combat. When all players are familiar with the rules, you are ready to play.

Aircraft Specifications

Each plane has its own unique abilities and limitations. These specifications are listed for each plane on the Aircraft Reference Cards. A sample card for the Sopwith 7F.1 Snipe is shown below.

Sopwith 7F. 1 Snipe

230 hp Bentley Rotary 2 Oct 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	120	110	350
5,000-9,950	120	110	300
10,000-14,950	110	100	250
15,000-up	110	100	200

Maximum Dive: 1,500 ft. Ceiling: 19,500 ft.

Two ff Vickers
Single seat fighter, ground attack
British

E	FF	RF	T	LW	CW	RW
6	11	15	11	12	12	12

The following information is listed on the card:

Aircraft name: Sopwith 7F.1 Snipe
Engine: 230 hp Bentley Rotary 2.
Front line service dates: October 1918 to end of war.
Altitude (feet): These altitude ranges are the same for all aircraft. A plane's maximum speed and climb rate are reduced at higher altitudes.
Top speed: *This is the fastest speed (in miles per hour) that plane can have when it flies straight.* To reach this speed the plane must fly in a straight line without turning. A plane moves one square on the game map for each 10 mph of its speed, so a plane with a top speed of 120 mph could move up to 12 squares in a straight line.
Turn Speed: *This is the fastest speed (in mph) that the plane can have if it turns during its move.* A plane can turn every time it enters a new square, but the plane is limited to its turn speed no matter how many times it turns. A plane with a turn speed of 90 mph can move only nine squares whether it turns once, twice or nine times.
Climb Rate: *This is the maximum number of feet a plane can climb (increase its altitude) during its movement.*
Maximum Dive: *This is the maximum number of feet a plane can dive (decrease its altitude) per turn.* A plane must move forward one extra square for each full 100 feet it dives. This extra movement is added to the plane's top or turn speed. A plane that is turning at 90 mph and diving 500 or 550 feet must move 14 squares on the game map.
Ceiling: *This is the maximum altitude to which the plane can climb.* Planes cannot fly higher than their ceiling.
Armament: Two ff Vickers. These are the plane's guns ("ff" means forward firing guns, "flx" means flexible-mount guns that can fire in any direction).

Primary uses: Single-seat fighter and ground attack. The types of missions aircraft are used for in the game are listed below.

Bombing:	strategic high-level day bombing
Recon:	reconnaissance and photography
Obs:	observation and artillery spotting
Fighter:	escort and pursuit
Ground Attack:	low-level tactical bombing

An asterisk (*) means the plane is a non-fighter aircraft. Non-fighters are penalized in movement (see Movement).

Nationality: British. Some aircraft types were used by the air forces of several nations.

Hit profile: These seven numbers show the maximum number of hits each section of the plane can take before the plane is shot down. A plane is shot down if any one of these sections takes its maximum number of hits. The first four numbers represent sections of the plane's body and are arranged in order from front to back; they are engine (E), forward fuselage (FF), rear fuselage (RF) and tail (T). The remaining three numbers represent sections of the plane's wings and are arranged from left to right; they are left wing (LW), center wing (CW) and right wing (RW).

Sequence of Play

A **DAWN PATROL** game is played in a series of game turns. Each game turn is arranged so that movement, attacks and other activities always happen in the same order. This sequence is outlined below.

1. Each player rolls two dice to determine the movement order. Other factors (tailing, reversals, altitude, etc.) can affect the order.
2. Players involved in tailing attacks choose cards.
3. Players move in the following order:
   a) planes at lower altitudes move first (see below)
   b) all other aircraft move in the order set by the dice rolls.
4. After moving, each pilot must decide whether he will shoot at one of the aircraft already in his field of fire. This decision must be announced to the other players. Observers (rear-seat gunners in two-seater planes) must wait until all other planes have moved before picking a target.
5. Attacks are made after all planes have moved. Pilots who chose targets after moving may shoot at them. Any pilot who did not choose a target after moving can shoot at a plane that subsequently moved into his field of fire. Rear observers can shoot at any target in their field of fire.
6. After all firing is finished and damage is recorded, players must announce whether they are tailing another plane next turn.

Determining Movement Order

To simulate the excitement of dogfighting, players do not move in the same order each turn. Instead, each player rolls two dice and records the number on his or her mission log. The players move in the order of the dice rolls, from highest to lowest. This order will be modified by two conditions:

a) Non-fighter aircraft (those with asterisks (*) on their reference cards) must add one to the dice roll.
b) Planes that are 2,000 feet or more below all other planes move first, regardless of their dice rolls. If a German squadron at 10,000 feet approaches a French squadron at 13,000 feet, all the German planes must move before any of the French planes.

If players roll the same number they should roll again to break the tie (non-fighter types do not add one to this tie-breaking rolls). Players should note that rolling a low number and moving last is better than rolling a high number and moving first; the plane that moves last has a better choice of targets.

Normal Movement

A plane uses normal movement when it flies straight or turns without using a special maneuver. The following rules explain how to use normal movement.

1. An aircraft's speeds are given in miles per hour (mph). In game terms, a plane will move one square on the game board for every 10 mph of its current speed. The Sopwith Snipe has a top speed of 120 mph at 3,000 feet. At this altitude the Snipe can move a maximum of 12 squares in a straight line.
2. Each plane counter must face a side or corner of the square it is in. A counter faces the direction that the front of the airplane points toward.
3. Planes can move along rows of squares, diagonally, or a combination of both.
4. A plane must move into the square it is facing every time it makes a normal move.
5. After moving into a square, a plane can continue moving straight ahead or it can turn 45 degrees to the left or right. A 45 degree turn lets a plane change its facing from a side of a square to a corner or from a corner to a side.
6. A plane can turn 45 degrees every time it enters a new square; a plane moving eight squares could make eight 45 degree turns.
7. When a plane turns, its maximum speed is its listed turn speed.
8. Turning does not use up a square of movement; it is free.
9. Top speed is the maximum speed a plane can have when flying level in a straight line. A plane can move farther than its top speed allows by diving (see Altitude).
10. Turn speed is the maximum speed that a plane can have if it makes one or more 45 degree turns during its movement. A plane can move farther than its turn speed allows by diving (see Altitude).
11. A plane does not have to move at its top or turn speed. The top and turn speeds are the plane's maximum speeds. A pilot may want to move slower to end his move in a specific square. The speed a pilot actually flies is called *throttle speed,* and can be changed from one turn to the next. A plane's throttle speed determines how far the plane moves under its own power. The number of squares a plane moves on the map is the total of its throttle speed and any bonus it gains by diving. The Sopwith Snipe, for example, has a turn speed of 110 mph below 5,000 feet. If the pilot wanted to move only seven squares, however, he could set his throttle speed at 70 mph.
12. Players write their plane's throttle speed on their mission log each turn after moving.
13. At the beginning of a turn, a plane is moving at whatever throttle speed it had at the end of the previous turn.
14. During a move,a plane can decelerate to its minimum speed or accelerate as much as 20 mph. A plane cannot increase its throttle speed more than 20 mph from one turn to the next nor can it fly faster than its top and turn speeds.
15. The minimum speed for planes is 60 mph in the Basic Game. (In the Advanced Game, some planes can fly slower than 60 mph. Gliding with the engine off, also covered in the Advanced Game, allows any plane to move slower than 60 mph.)
16. A pilot can escape from a battle by flying away from enemy planes until it is obvious that no enemy planes can catch him or attack him. Escaping from combat allows the enemy to control the skies, but it also keeps pilots alive. In the Advanced Game, surviving missions is one of the steps toward gaining experience bonuses.

Several exceptions to these movement rules are explained in the section on Special Maneuvers.

Planes are not restricted to flying within the limited boundaries of the board. If a player wants to fly off the edge of the board, all the planes can be moved the same number of spaces toward the center of the board; their relative positions will stay the same.

Altitude

Altitude plays a very important part in DAWN PATROL combat. Planes climb to gain altitude and dive to lose it. Altitude affects movement order, maximum speeds and climb rate.

1. Altitude is measured in 50-foot increments. A plane could end its move at 650 feet or 700 feet, but not at 675 feet.
2. Because the game board is two-dimensional, players must record their plane's altitude on their mission log after moving.
3. Altitude is never a secret. Players must announce their altitudes after they move and whenever another player asks.
4. A plane can end its move in the same square as another plane only if they are at different altitudes or if the second plane has not yet moved. When two or more planes are in the same square, place the planes at higher altitudes on top of the planes at lower altitudes.
5. Climb rate is the maximum number of feet a plane can climb in one complete move. A plane's speed is not reduced when the plane climbs.
6. Maximum dive is the maximum number of feet the plane can descend in one complete move. All aircraft gain one extra square of movement for every full 100 feet they dive. This movement bonus is added to the plane's throttle speed. A Sopwith Snipe flying at a throttle speed of 90 mph and diving 850 feet moves a total of 17 squares — 9 because of its throttle speed and 8 more gained in the dive.
7. When a plane changes altitude it uses the top speed, turn speed and climb rate from its starting altitude throughout the entire movement of the game turn.

Special Maneuvers

Besides the normal movement described above, there are 16 special maneuvers that can be used at any time These maneuvers are divided into four categories:

Simple maneuvers — straight, bank left, bank right, turn left and turn right.
Altitude maneuvers — climb and dive.
Reversal maneuvers — circle, stall and loop.
Fancy maneuvers — wingover, Immelmann turn, split-S, tail spin, barrel roll and falling leaf.

A plane can use any number of simple maneuvers during its movement but *only one altitude, reversal or fancy maneuver is allowed.* A bank must be separated from banks in the opposite direction and other non-simple maneuvers by at least two squares of normal movement.

Climb and dive restrictions given in this section apply only during tailing attempts and collisions. For example, a plane using a bank left maneuver is restricted to a maximum climb or dive of 50 feet for its entire move, but this applies only if the plane is tailing another plane, is being tailed or is in danger of colliding with another plane. In a non-combat situation the plane could bank left and climb or dive up to the maximum allowed on its reference card for that altitude.

Climbs and dives are considered special maneuvers only when they are used in tailing.

Straight, Bank Left, Bank Right. Straight, bank left and bank right maneuvers are shown in figures 1 and 2. A plane performing one of these maneuvers must move at least three squares. After moving three squares the pilot may continue the maneuver or may resume normal movement. The arrows in the maneuver diagrams show the directions a plane can point when it pulls out of the maneuver. A plane using these maneuvers during tailing can climb or dive 50 feet. At other times, the maximum climb and dive rates are those on the plane's reference card.

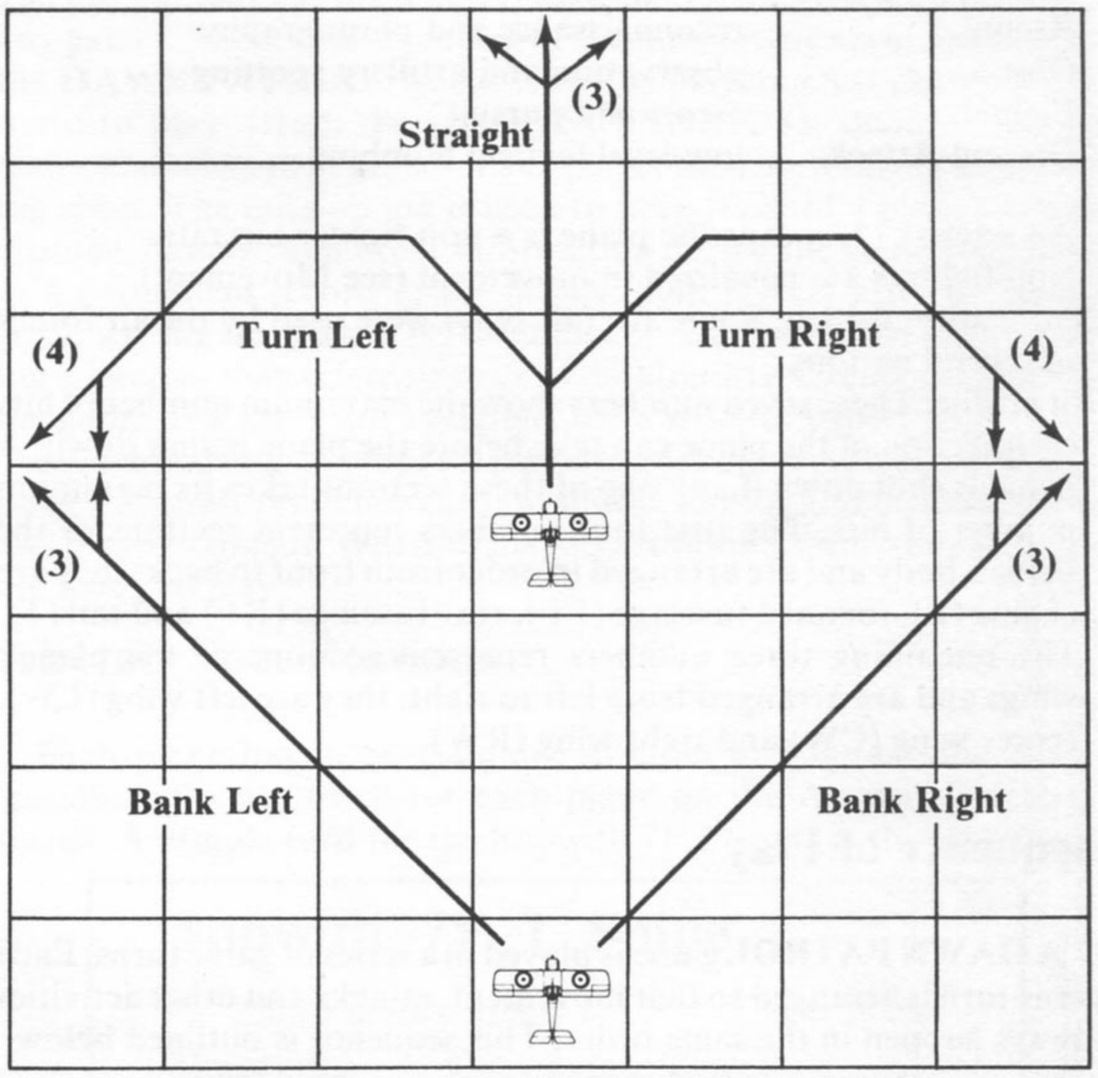


Figure 1

Turn Left, Turn Right. Turn left and turn right are shown in figures 1 and 2. A plane performing a turn maneuver must move at least four squares through the turn. After moving four squares it may continue turning or resume normal movement. A plane using one of these maneuvers during tailing can climb or dive up to 100 feet.

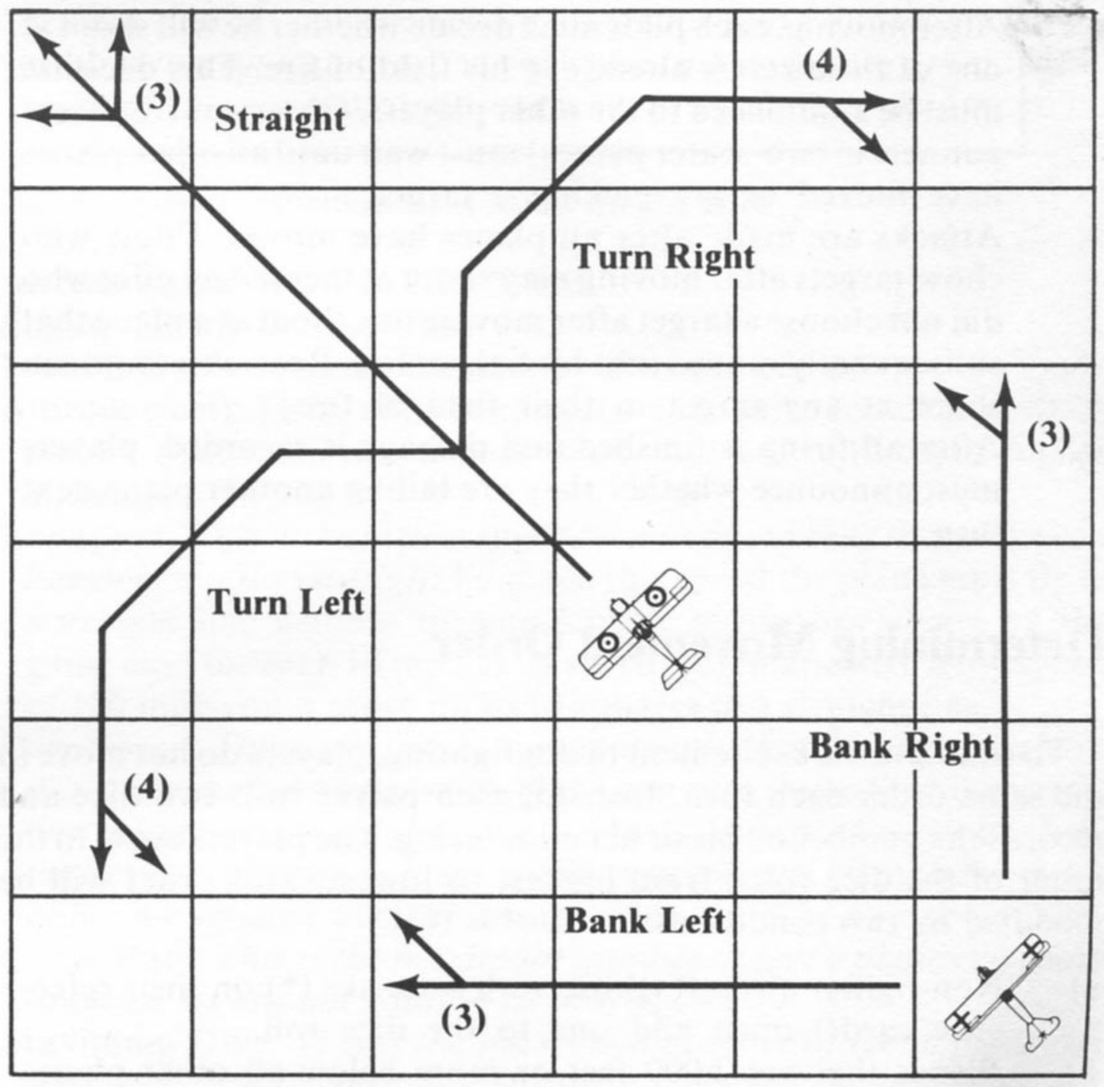


Figure 2

Circle. The circle maneuver, shown in figure 3, is an extended turn. A plane must move at least seven squares around the circle before pulling out of the maneuver. If the plane is flying slower than 70 mph, then it must spend all of its movement in the circle, but it is free to move out of the circle at the beginning of its next turn. Circle is a reversal maneuver (see Tailing). In a tailing situation, the maximum climb or dive for a circling plane is 100 feet.

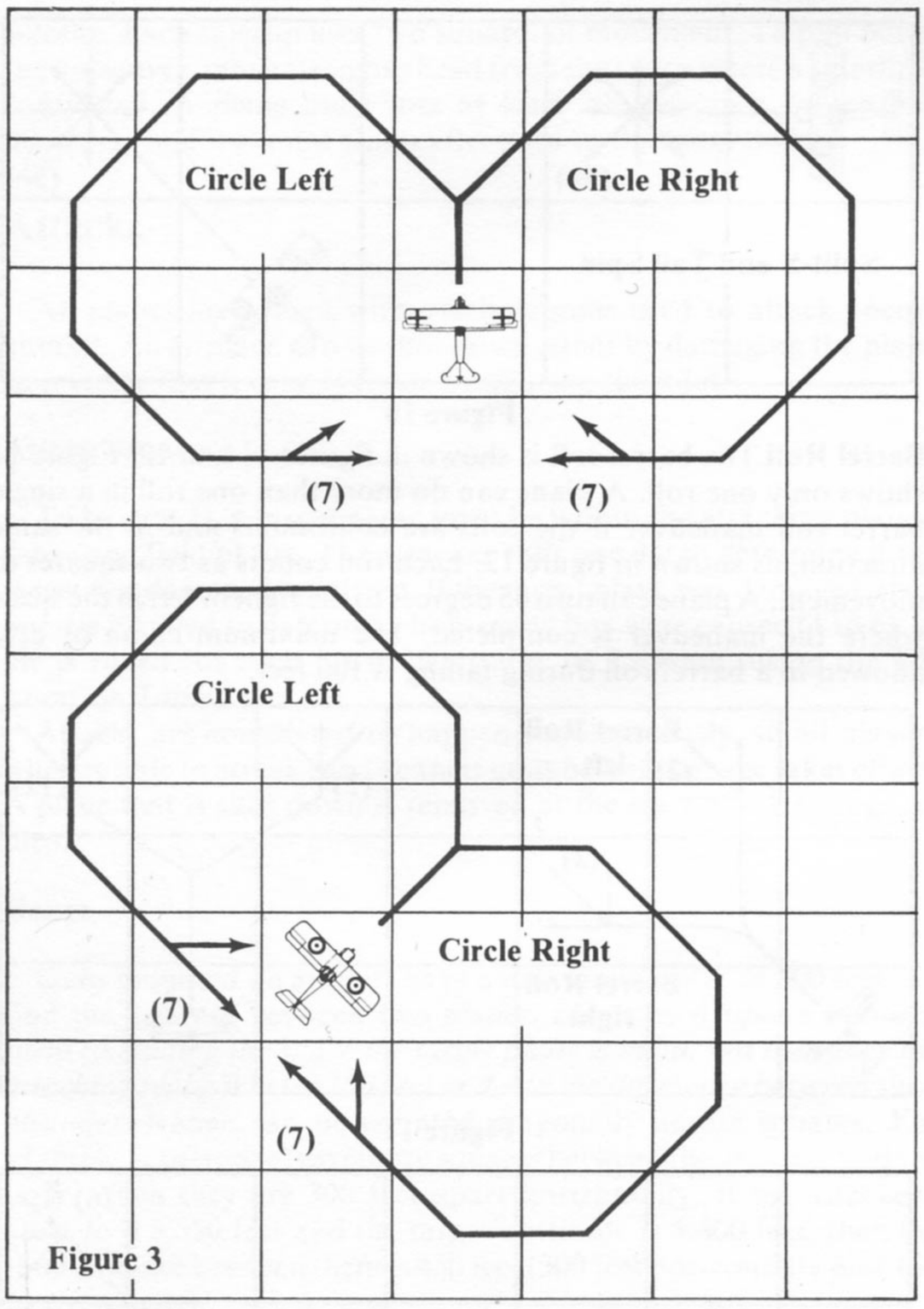


Figure 3

Wingover. The wingover is a tight turn, shown in figure 4. Performing a wingover uses four squares of movement. It is the only maneuver that uses a 90-degree turn. A plane performing a wingover during tailing can climb 50 feet or dive up to 100 feet.

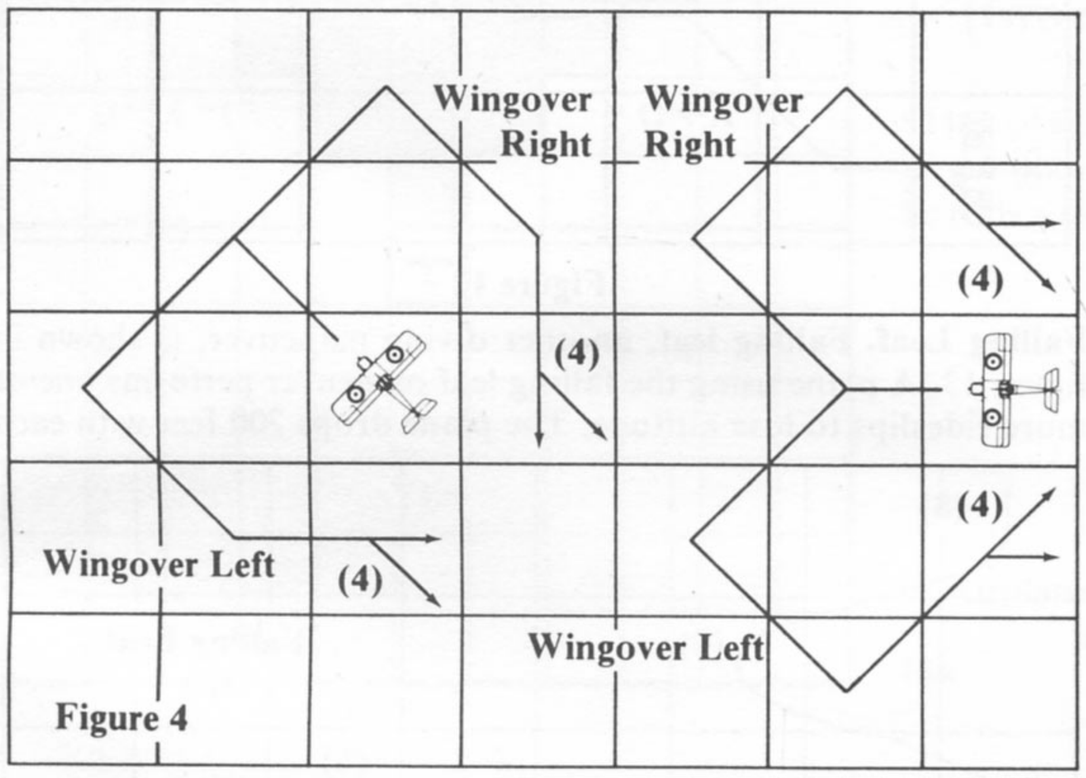


Figure 4

Immelmann Turn. The Immelmann turn, shown in figure 5, is a half loop with a roll at the top. It can be used to change direction quickly, and is very handy in a dogfight. When a plane performs an Immelmann turn, move the plane's counter to the square immediately behind its starting position and turn it so it faces the opposite direction. This counts as three squares of movement. A plane performing an Immelmann turn during tailing can climb up to 200 feet or dive up to 200 feet. The Immelmann turn was named after the German ace Max Immelmann.

Climb. A climb maneuver is shown in figure 6. A climbing plane moves four squares in a straight line and can then move as desired. During tailing, the minimum climb is 200 feet at altitudes below

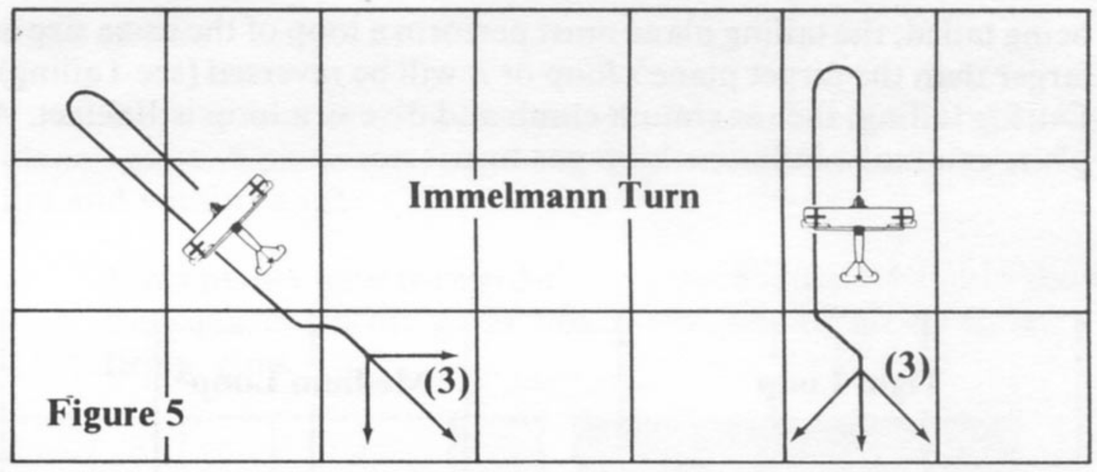


Figure 5

10,000 feet and 100 feet at altitudes of 10,000 feet or more. In non-combat situations the maximum climb is the climb rate on the plane's reference card, and it is not necessary to move four squares in a straight line.

Dive. The dive involves simply moving four or more squares using any combination of straight flight and 45 degree turns. A plane involved in tailing must dive at least 400 feet. The maximum dive is the same as that listed on the aircraft reference card. The dive is not illustrated.

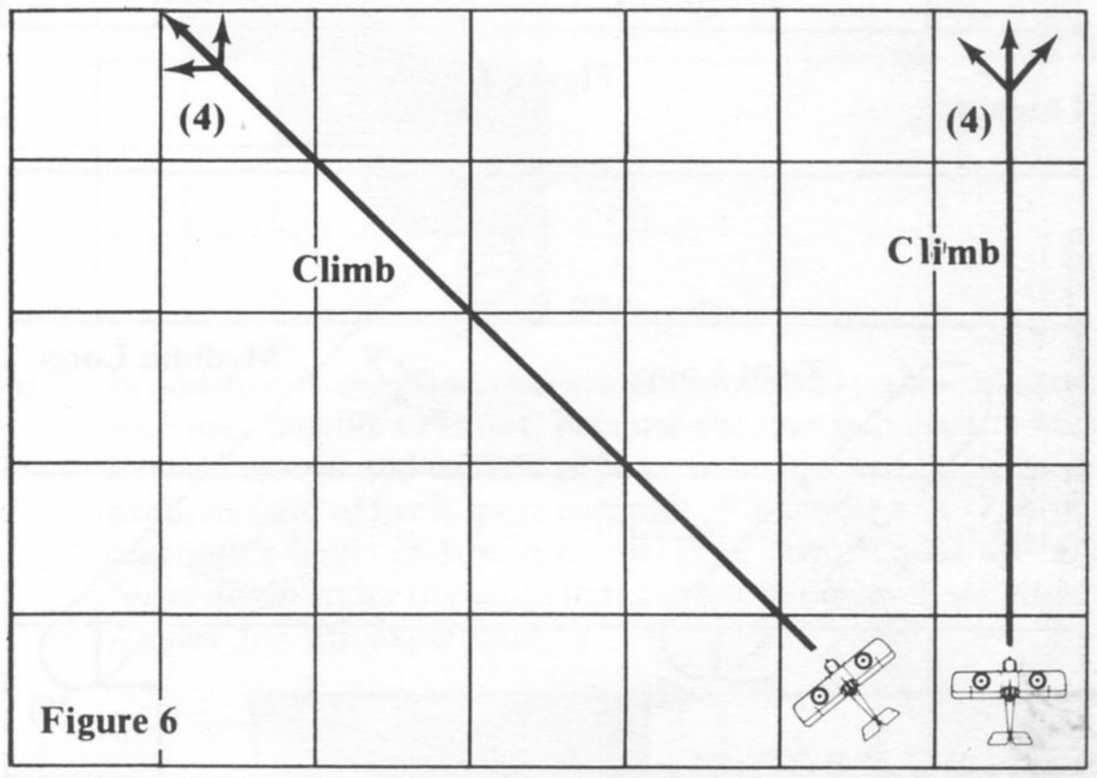


Figure 6

Stall. A stall (see figure 7) is performed by moving forward one square and counting it as five squares. A plane can move out of a stall straight ahead or at a 45 degree angle. A plane can perform only one stall per turn. Stalling is a reversal maneuver (see Tailing). A plane that uses a stall during tailing can climb up to 100 feet if its altitude is less than 10,000 feet and 50 feet if its altitude is 10,000 feet or more. There is no dive restriction in a stall (other than the plane's maximum dive). Top speed can be used if the plane does not turn.

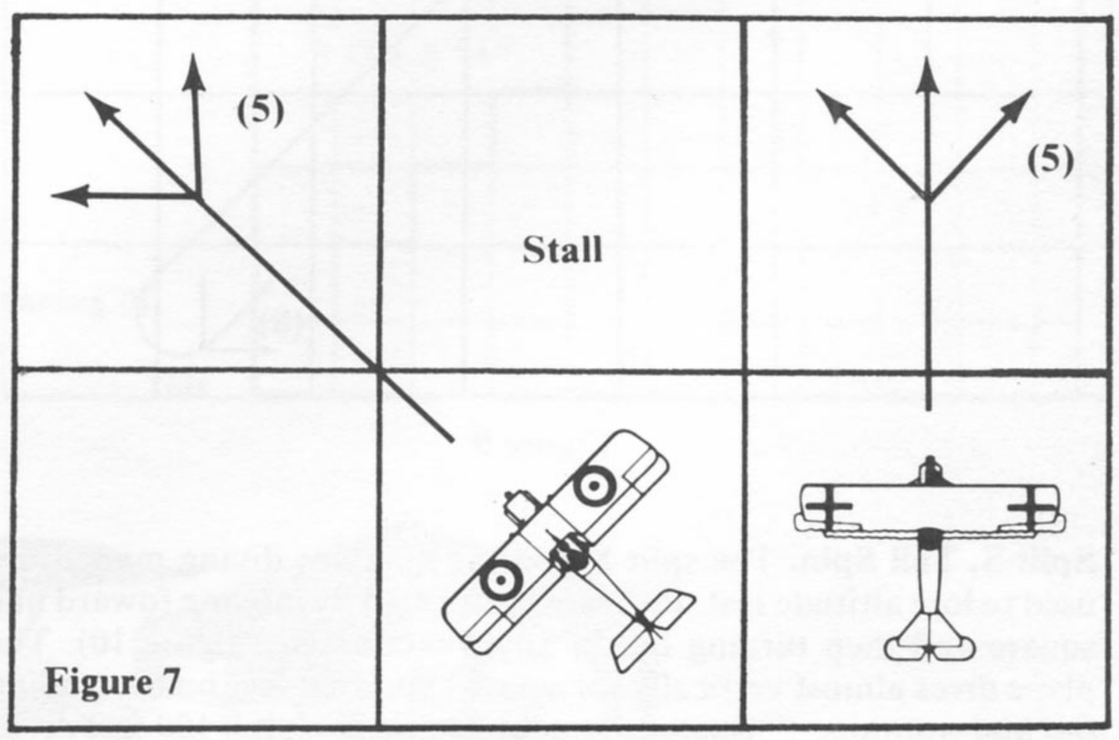


Figure 7

Loop. A loop is performed by placing the plane counter one, two or three squares behind its starting position without changing its facing (see figures 8 and 9). Moving through a one-square loop counts as four squares of movement, a two-square loop counts as six and a three-square loop counts as eight. A plane can turn 45 degrees at the end of a loop. Top speed can be used if the plane does not turn during its movement. Loops are reversal maneuvers. If a looping plane is

being tailed, the tailing plane must perform a loop of the same size or larger than the target plane's loop or it will be reversed (see Tailing). During tailing, the maximum climb and dive in a loop is 100 feet. A plane can make only one loop per turn.

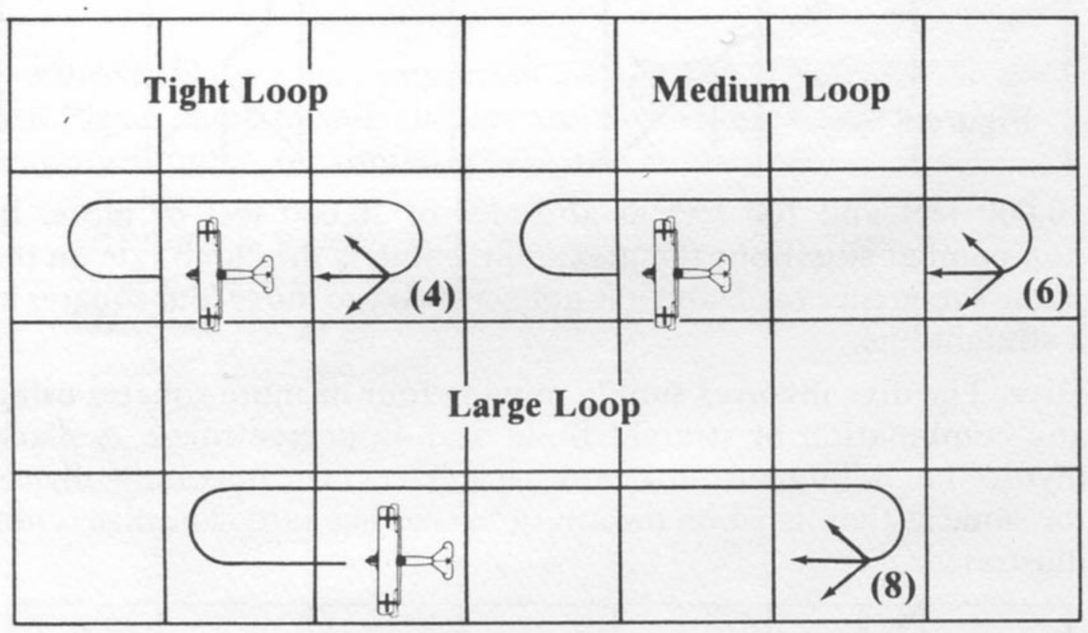


Figure 8

Figure 9

Split-S, Tail Spin. The split-S and tail spin are diving maneuvers used to lose altitude fast. Both are performed by moving foward one square and then turning out in any direction (see figure 10). The plane dives almost vertically for several hundred feet before pulling out and resuming normal movement. Count each full 100 feet dived in the maneuver as one square of movement and then add the diving bonus squares. The difference between the two maneuvers is that the diving bonus from a tail spin is only half the usual diving bonus; add only one bonus square for each full 200 feet dived in a tail spin. A plane doing a tail spin or split-S must dive at least 400 feet. It can lose more altitude by diving farther during the maneuver or by making a normal dive after the maneuver.

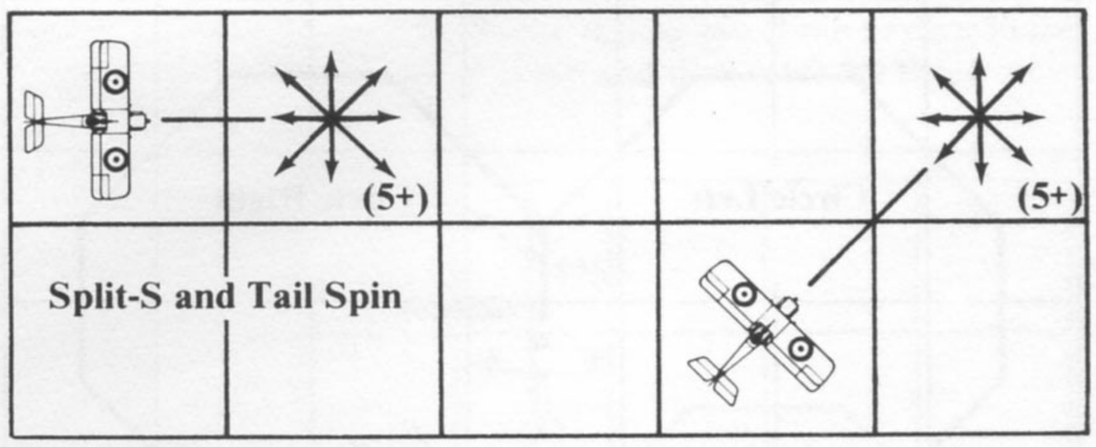


Figure 10

Barrel Roll The barrel roll is shown in figures 11 and 12. Figure 11 shows only one roll. A plane can do more than one roll in a single barrel roll maneuver if the rolls are continuous and in the same direction, as shown in figure 12. Each roll counts as two squares of movement. A plane can turn 45 degrees to the right or left in the space where the maneuver is completed. The maximum climb or dive allowed in a barrel roll during tailing is 100 feet.

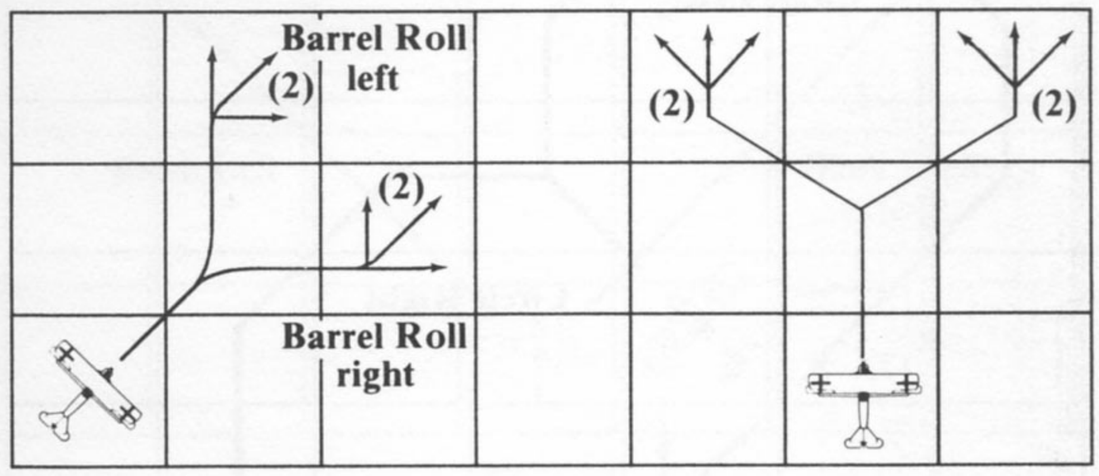


Figure 11

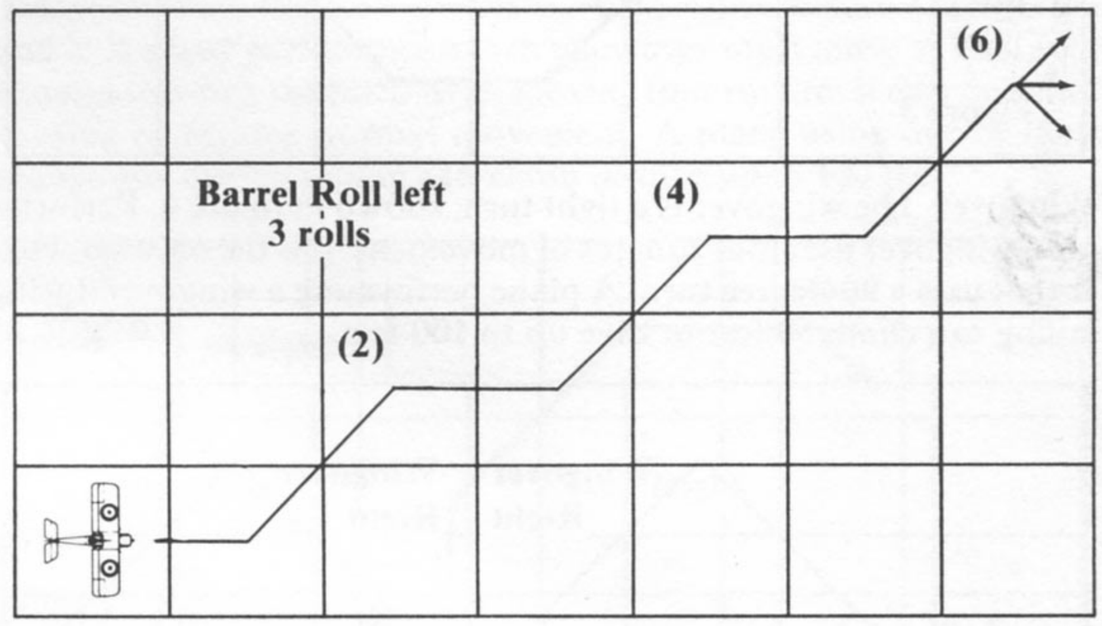


Figure 12

Falling Leaf. Falling leaf, another diving maneuver, is shown in figure 13. A plane using the falling leaf maneuver performs one or more sideslips to lose altitude. The plane drops 200 feet with each

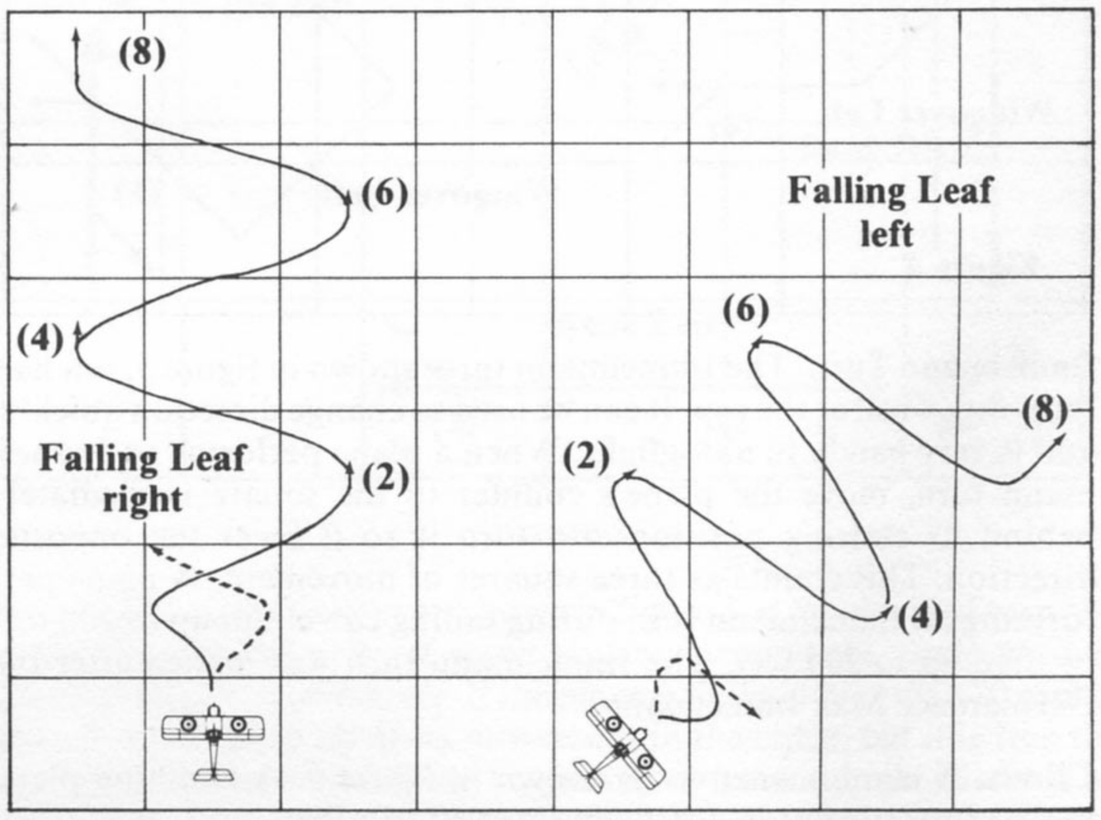


Figure 13

sideslip. Each sideslip uses two squares of movement. To pull out of the maneuver, move straight ahead from the space where a sideslip is completed. A plane must lose at least 200 feet in a falling leaf maneuver and it cannot climb afterward in the same turn.

Attacks

All planes are armed with machine guns used to attack enemy aircraft. An airplane can be shot down either by damaging the plane so severely that it cannot fly or by injuring the pilot.

Attack Sequence

To be shot at, a target plane must be within the attacking plane's range and field of fire. The attacker rolls one die to determine if the target was damaged or missed. If the target plane was damaged, then one die is rolled to determine how many hits were caused (1 to 6). A die is rolled for each hit to determine its location, using the Hit Location Table.

Attacks are considered to happen simultaneously, so all players who are able to attack can fire their guns before damage takes effect. A plane that is shot down is removed at the start of the next game turn.

Range

Guns mounted on aircraft have a maximum range of 500 feet. To find the distance between two planes, *count each square between them (including the space the target plane is in but not the space the attacking plane is in) as 100 feet and add the difference between their altitudes.* Range can be counted diagonally across squares. For example, if there are two empty squares between the attacker and the target, then they are 300 feet apart horizontally. If the attacker's altitude is 5,550 feet and the target's altitude is 5,400 feet, then the total distance between them is 450 feet (300 feet horizontally plus 150 feet vertically).

Field of Fire

A plane's field of fire is the area on the board that can be hit by the plane's guns. A plane can fire at any single target that is in its field of fire and within range.

a) Most planes have forward-firing guns. Figures 14 and 15 show the squares on the game board that can be hit by forward-firing guns.

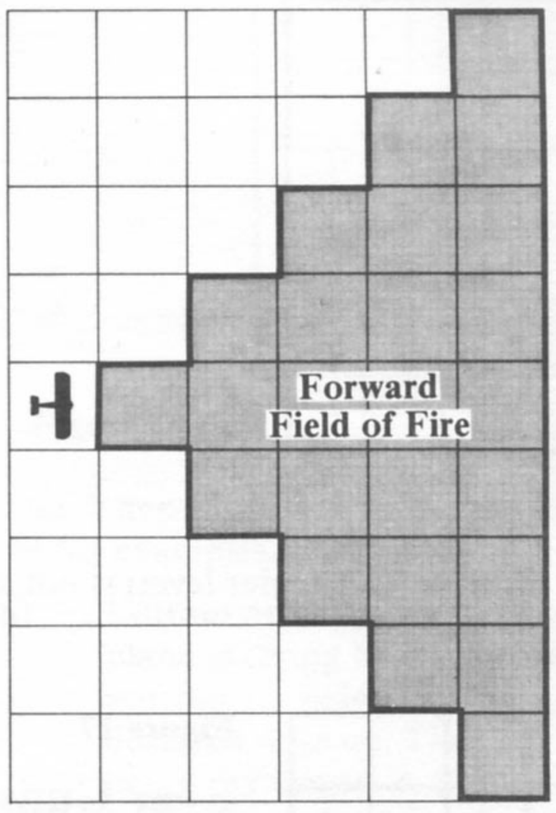


Figure 14

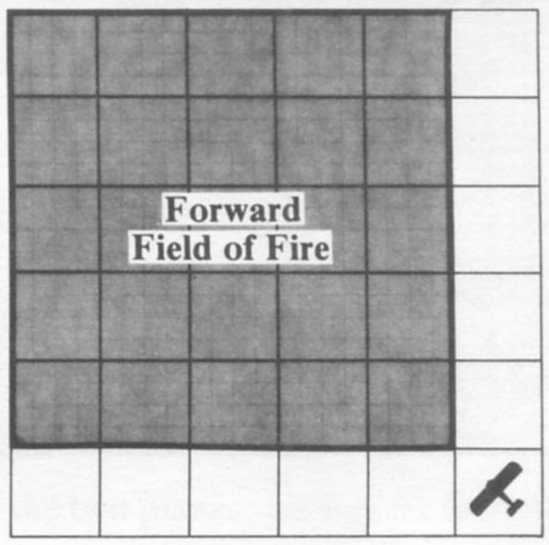


Figure 15

b) In addition to the pilot, two-seater planes carry a rear observer who may be able to shoot. Because the rear gun usually has a flexible mount and its field of fire can be blocked by the plane itself, its field of fire is more complex. Figures 16 and 17 show a rear gun's fields of fire in detail. (The terms "nose up" and "nose down" refer to planes that are not flying level; see Attack Angles for an explanation.)

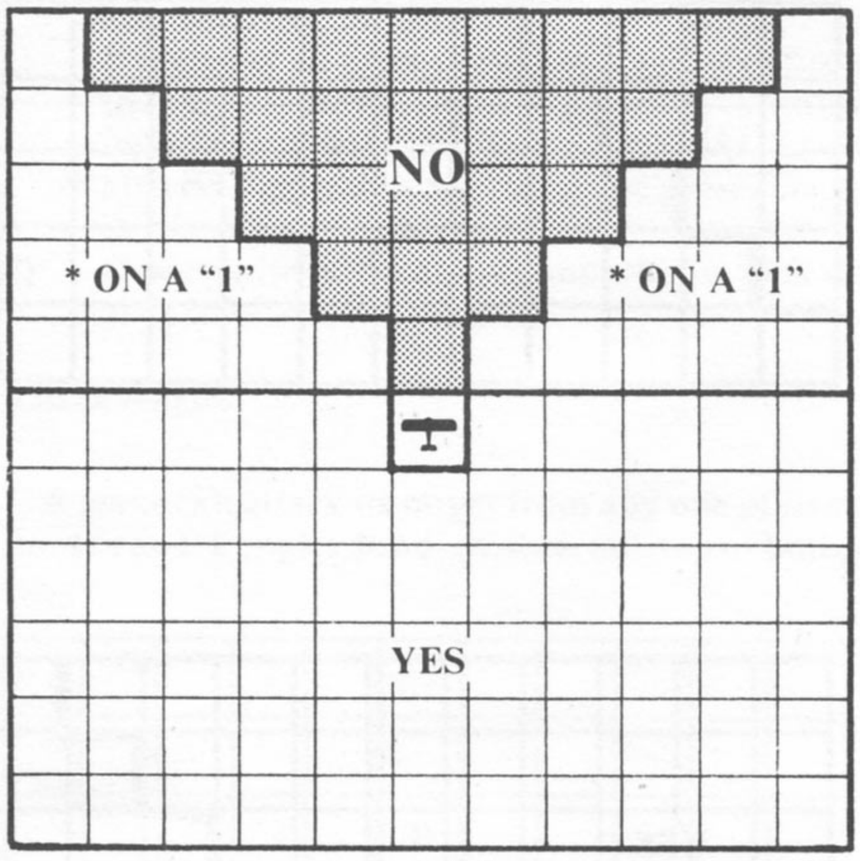
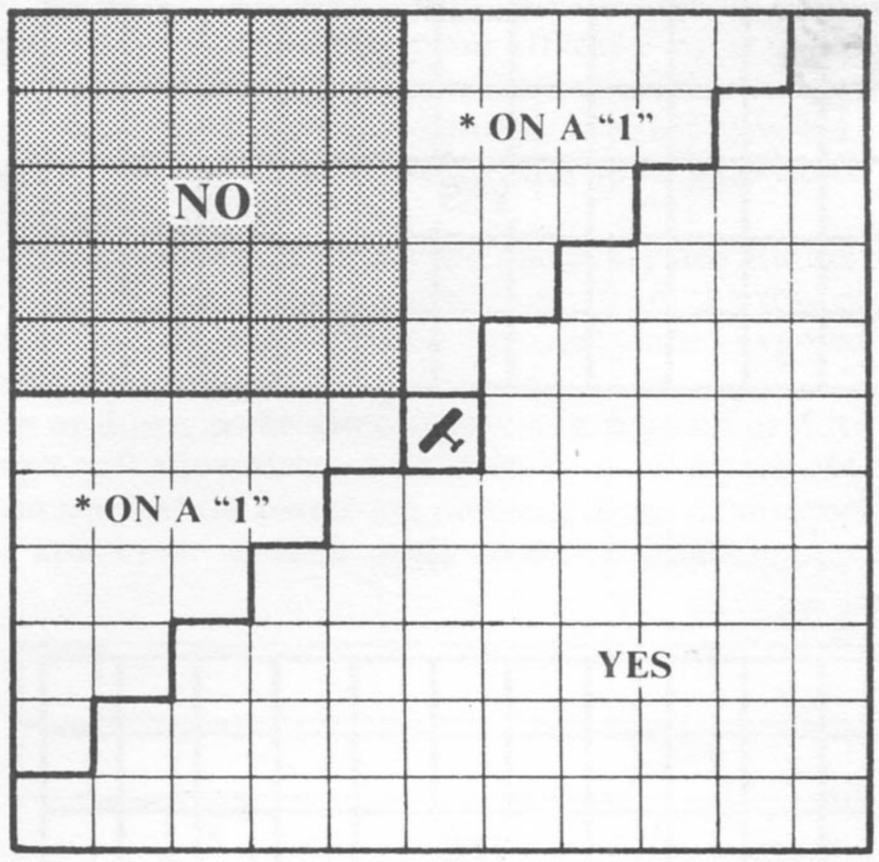


Figure 16

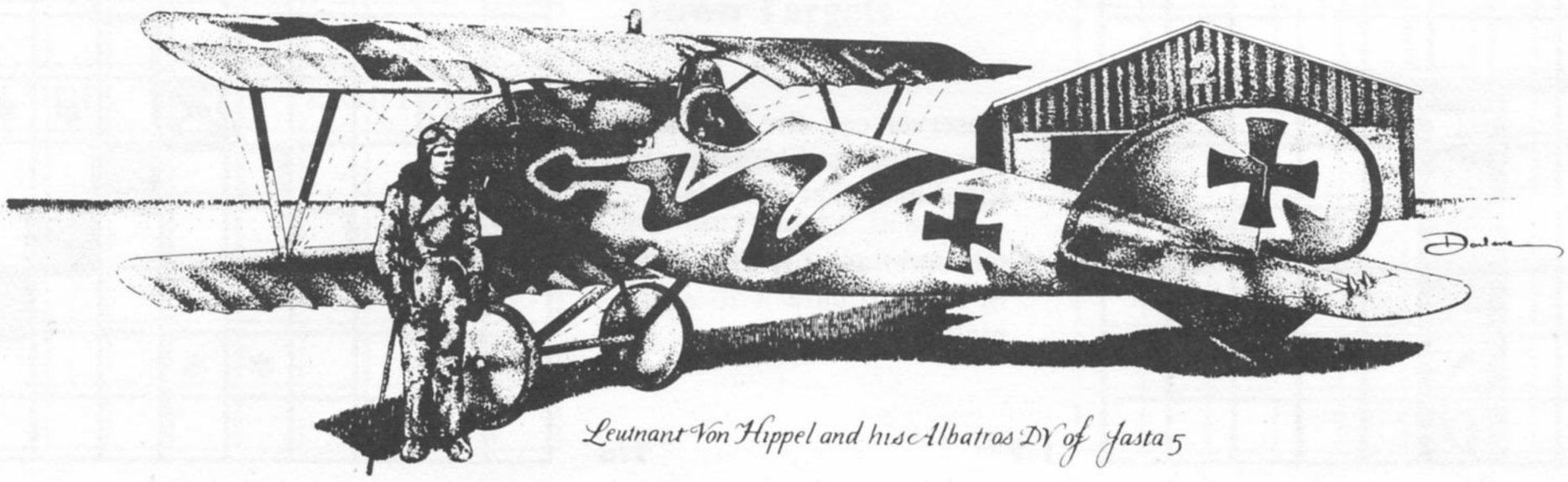
Target at same altitude (two-seater level)

*The observer can attack a target plane in these squares if he rolls a one on one die.

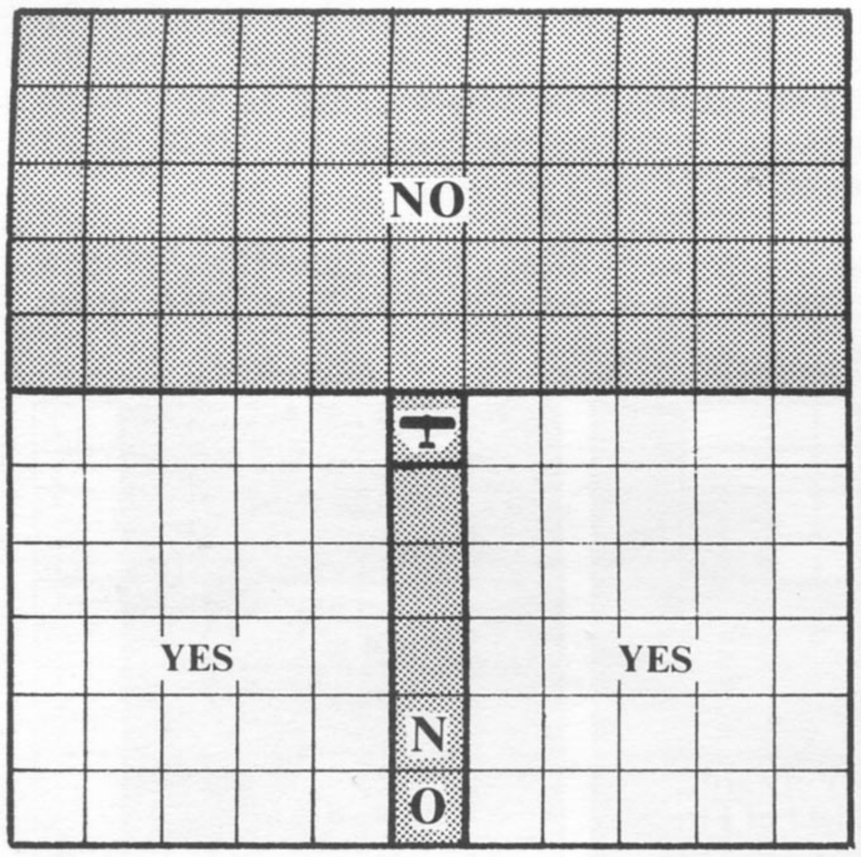


Airplanes show facing of attacker.

16a **16b**



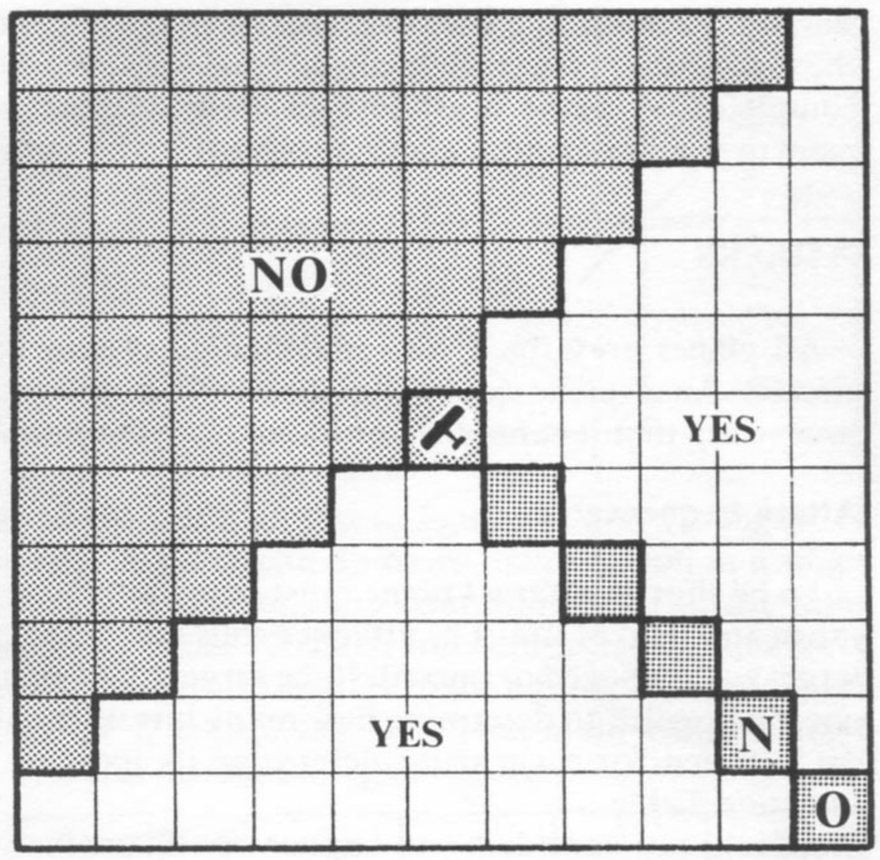
Leutnant Von Hippel and his Albatros DV of Jasta 5



16c

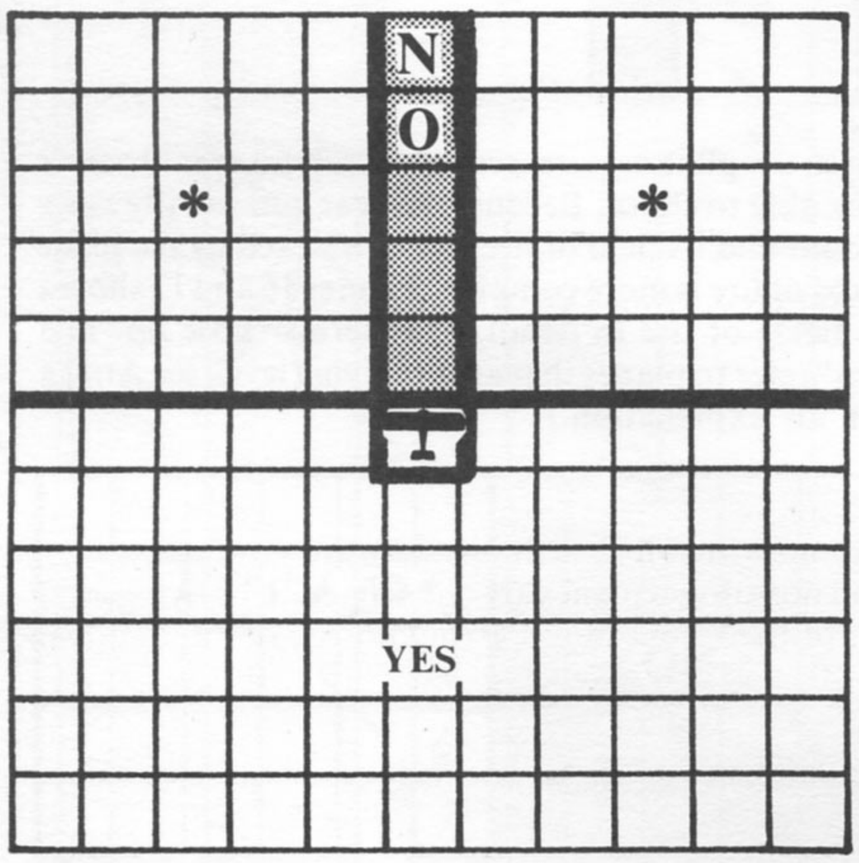
Figure 16

Target at lower altitude (two-seater level)



16d

Target at higher altitude (two-seater level) is not shown, since the rear guns' field of fire covers *all* squares.



17a

Figure 17

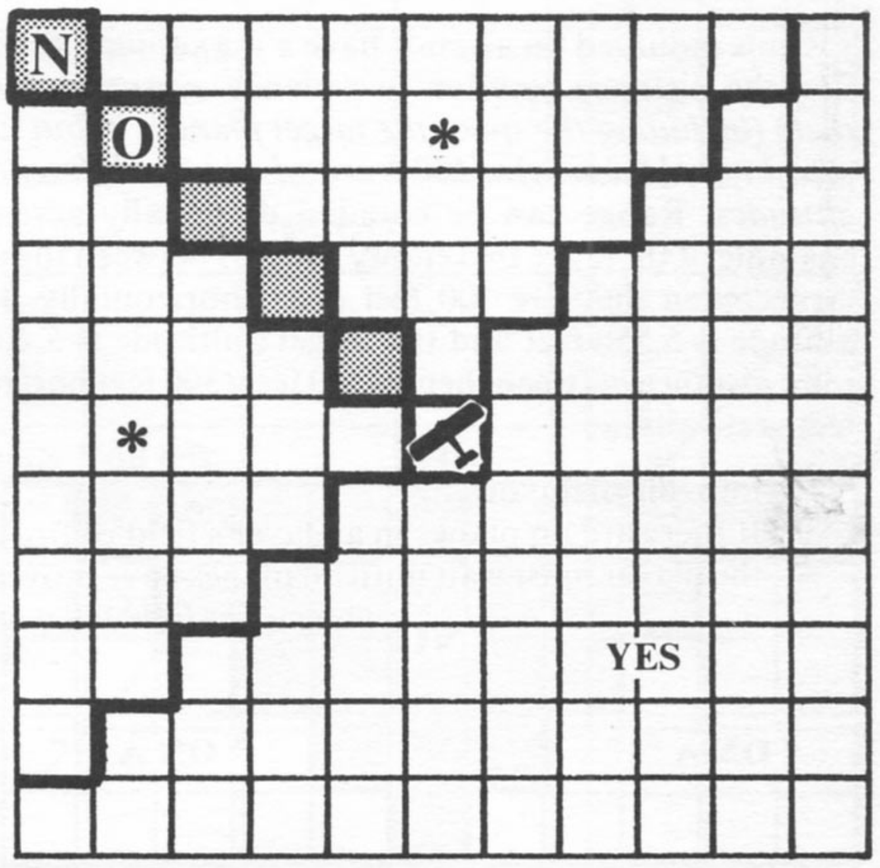
Rear Guns Fields of Fire

Airplane outline shows facing of two-seater for next turn.

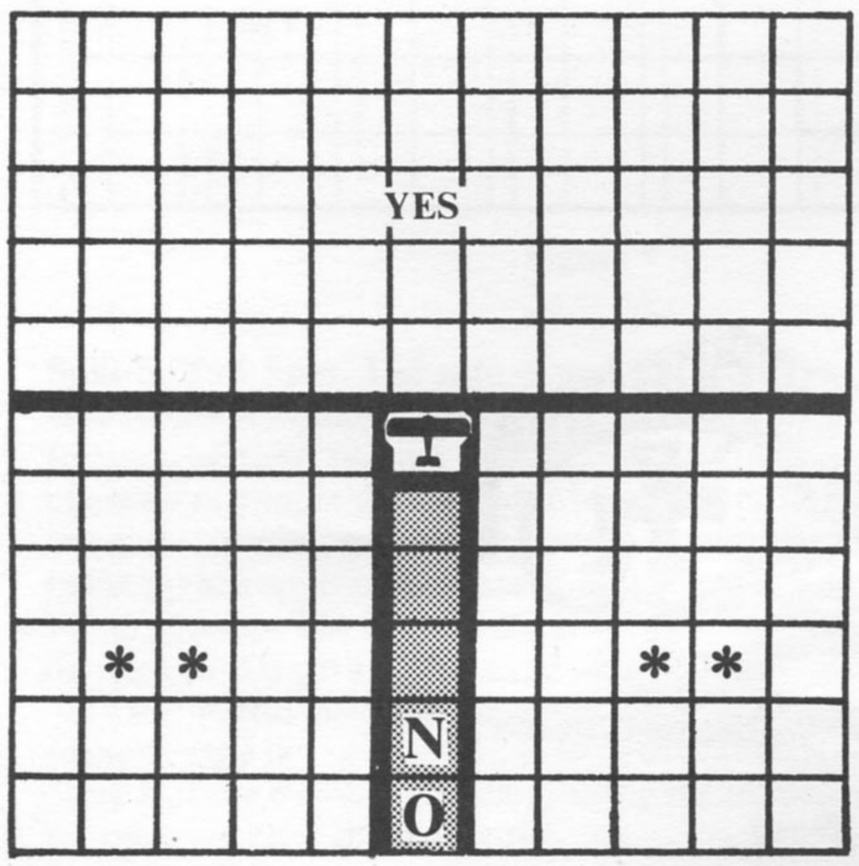
Two-seater "nose up"

* Observer can fire into all these squares if target is at equal or lower altitude.

Observer can fire at target in same square if it is at lower altitude.



17b

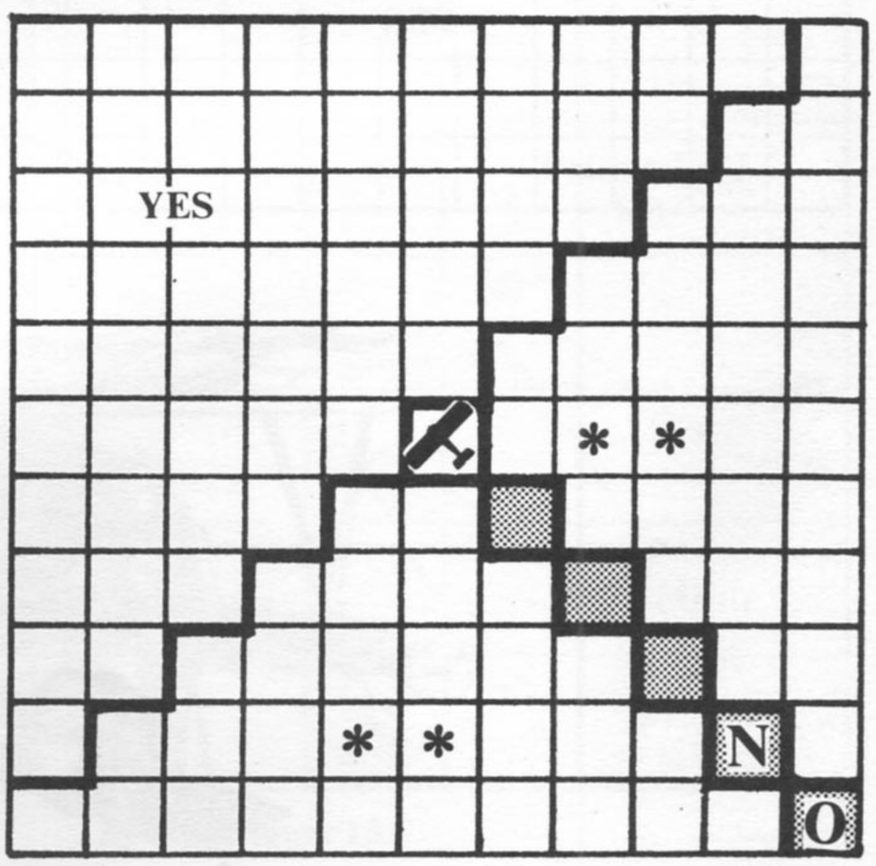


17c

Two-seater " nose down "

** Observer can fire into all these squares if target is at equal or higher altitude.

Observer can fire at target in same square if it is at higher altitude.



17d

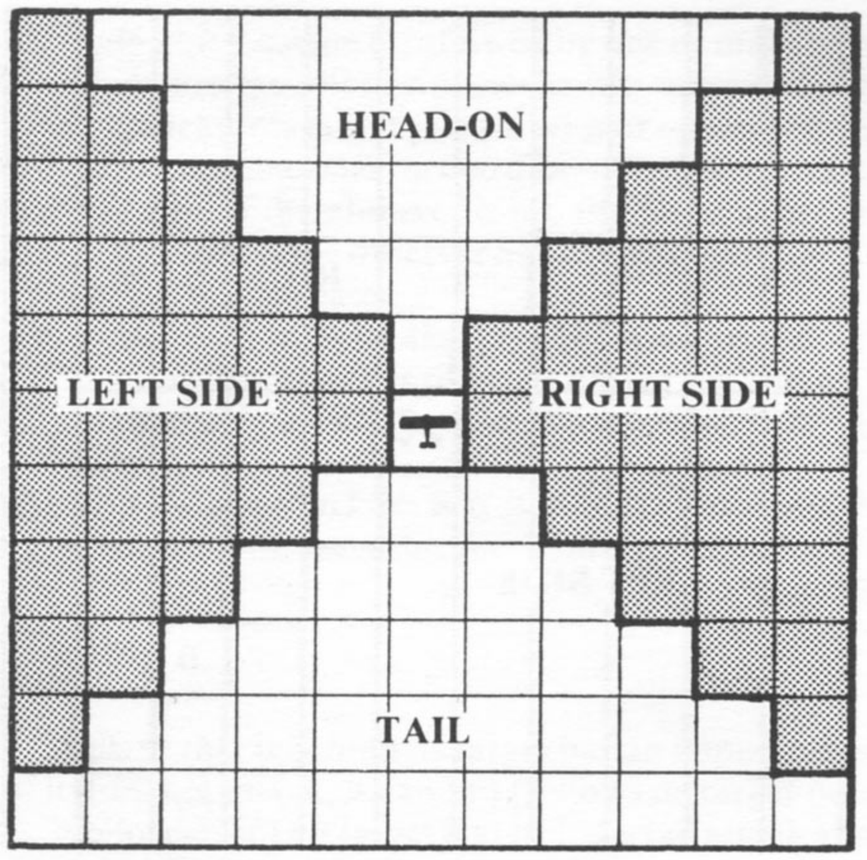


Figure 18

Attack Angles on a Level Target

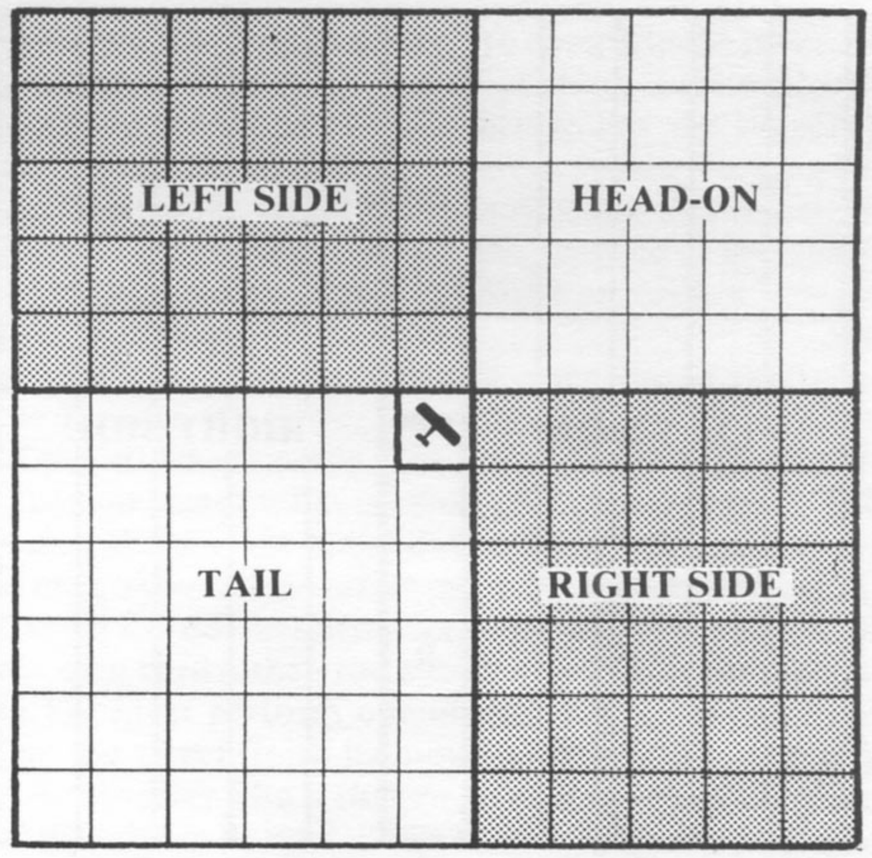


Figure 19

Targeting

After moving, a pilot can aim at (target on) any enemy plane that is in range, in his field of fire and finished with its movement. The pilot must announce which plane is his target.

a) A pilot must shoot at his chosen target. He cannot switch to another target unless the original shot is blocked by another plane (allowing a shot at the intervening plane) or the pilot is attacked head-on (allowing a shot at the attacker). Any pilot who is attacked head-on has the option of abandoning his prior target in favor of returning the head-on attack. The choice should be written secretly prior to shooting.

b) If a player decides not to pick a target after ending his move, then he cannot shoot at any plane in his field of fire that has already moved; the pilot can only shoot at a plane that moves into his field of fire.

c) If there are no planes in a player's field of fire after he moves, the player must wait until all planes have moved before choosing a target. The player who moves first will never have a target after moving unless another plane subsequently ends its move in his field of fire.

d) Observers in two-seaters cannot choose their targets until after all planes have moved.

Attack Angles

A plane can attack its target from any one of five different directions or attack angles: head-on, side, tail, top or bottom. The angle of attack depends on the positions of the two planes; see figures 18 and 19 for examples.

a) Bottom attacks can be made in two situations. If the target plane is flying level, the attacking plane can attack from the bottom by being moved into the target plane's square and declared nose up. The attacking plane must be at least 50 feet below its target. A bottom attack also can be made when a level-flying plane attacks a target that is nose up or nose down (see figure 20). *An aircraft cannot be declared nose up or nose down unless it is targeting on another plane in the same square.*

b) Top attacks, like bottom attacks, can be made in two situations. If the target is flying level, the attacking plane can attack from the top by moving into the same square as the target and declaring itself nose down. The attacking plane must be at least 50 feet above its target, and should be placed on top of its target on the board. The other situation that allows a top attack occurs when a level-flying plane attacks a target that is nose up or nose down (see figure 20).

c) Nose up and nose down planes are considered to be flying level at the start of their next move. Being nose up or nose down does not affect a plane's facing.

d) Most attacks on nose up or nose down planes are side attacks. Top and bottom attacks can be made only from the row of squares directly in front of or behind the target plane's exposed top or bottom.

e) Nosing up or down in the same square as a nose up or nose down target will allow either a head-on or a tail attack, depending on whether the planes are pointing in the same direction (tail attack) or at each other (head-on attack).

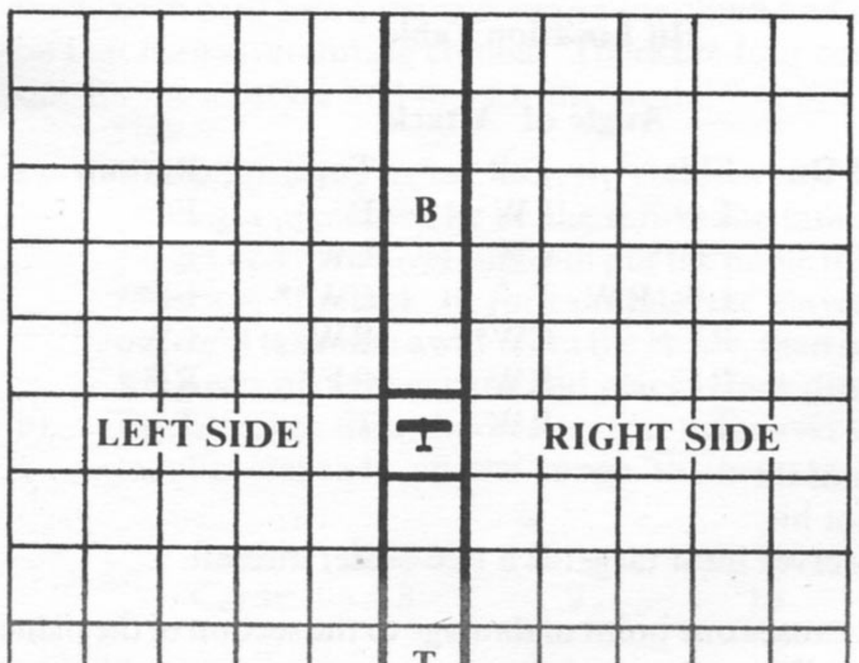


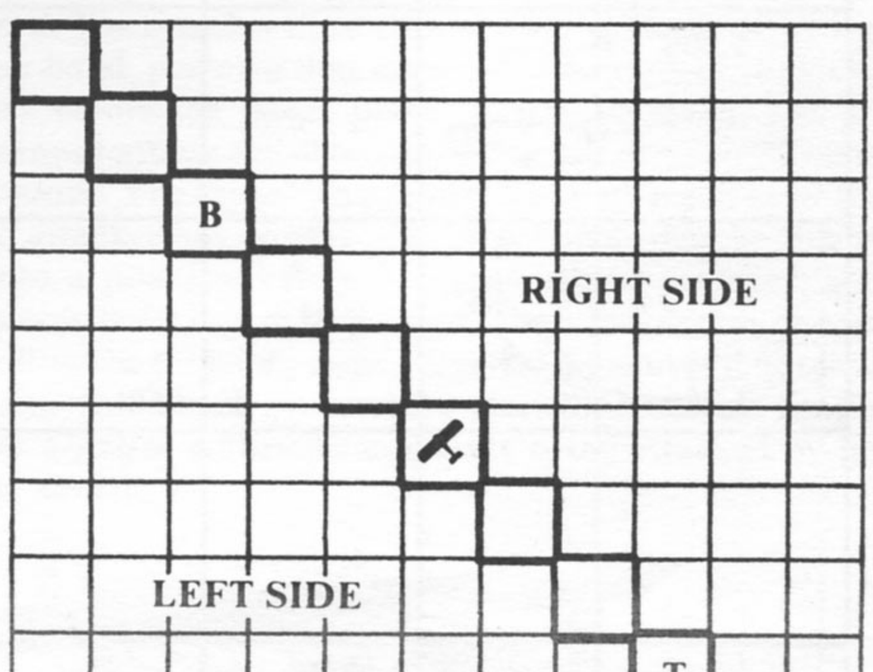
Figure 20

Target "Nose Up"

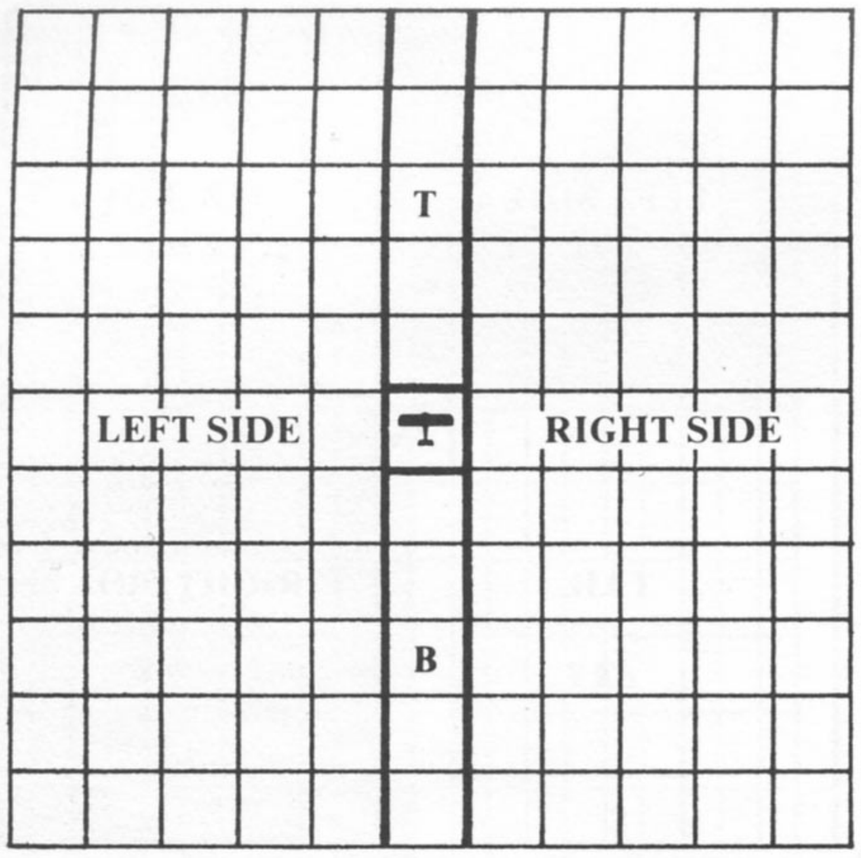
Attack Angles on Nose Up or Nose Down Targets

T = TOP
B = BOTTOM

NOTE: Attacker in same square may permit head-on, tail, or no shot.



20a 20b



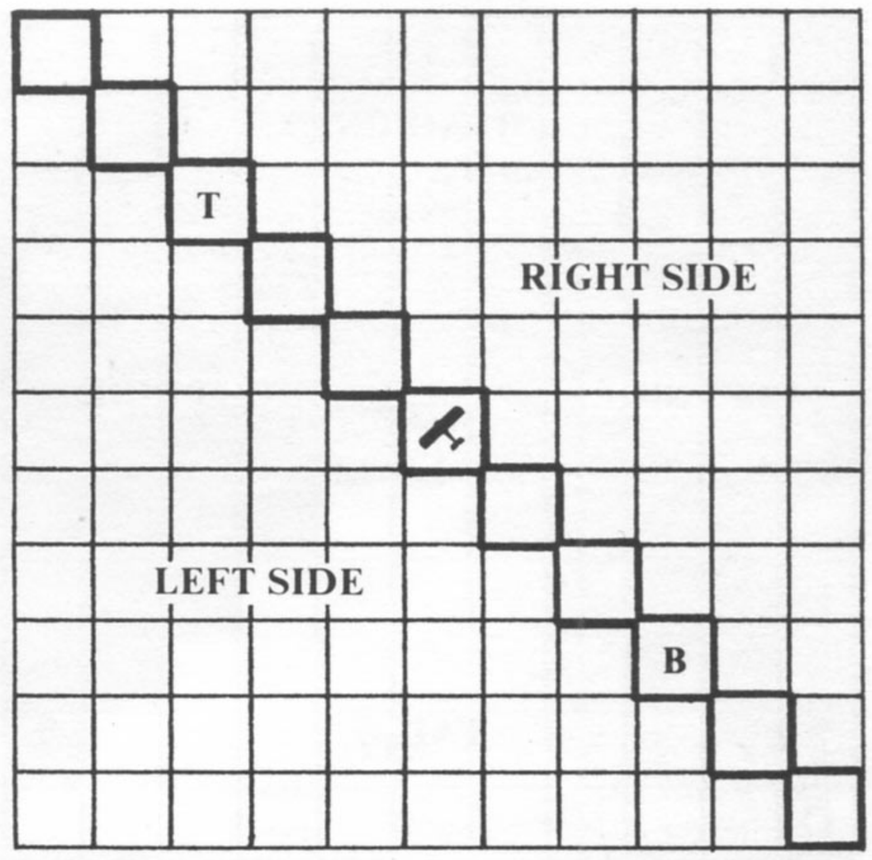
20c

Figure 20

Target "Nose Down"

T = TOP
B = BOTTOM

NOTE: Attacker in same square may permit head-on, tail, or no shot.



20d

Blocked Shots

Sometimes a plane will end its move in a space where it blocks another plane's attack. Whenever a shot is blocked this way, the attacker has the choice of either shooting at the blocking plane or not shooting at all. There are several ways to determine whether a shot is blocked:

a) If the attacking and target planes are at the same altitude and in the same row of squares (straight or diagonal), the shot is blocked if a third plane ends its move between them in the same row and at the same altitude.
b) If the attacking and target planes are in the same square at different altitudes, the shot is blocked if a third plane ends it move in the square at an altitude between them.
c) If a third plane ends its move exactly halfway between the attacking and target planes, the shot is blocked, even if the attacking and target planes are at different altitudes and/or in different rows of squares. The intervening plane must occupy the exact midpoint between both the attacking and target planes' altitudes and their positions on the board.

Examples: See figure 21. Planes A, B and C are at 1,000 feet. Plane B cannot shoot at Plane A because plane C is blocking the shot. Plane D is at 900 feet and Plane E is at 950 feet. Plane E is exactly halfway between planes A and D, so planes A and D cannot shoot at each other. Planes A and B have no enemy planes in their fields of fire; Plane D may shift its fire to plane E, because plane E blocked its shot at plane A; and plane E may shoot at plane B.

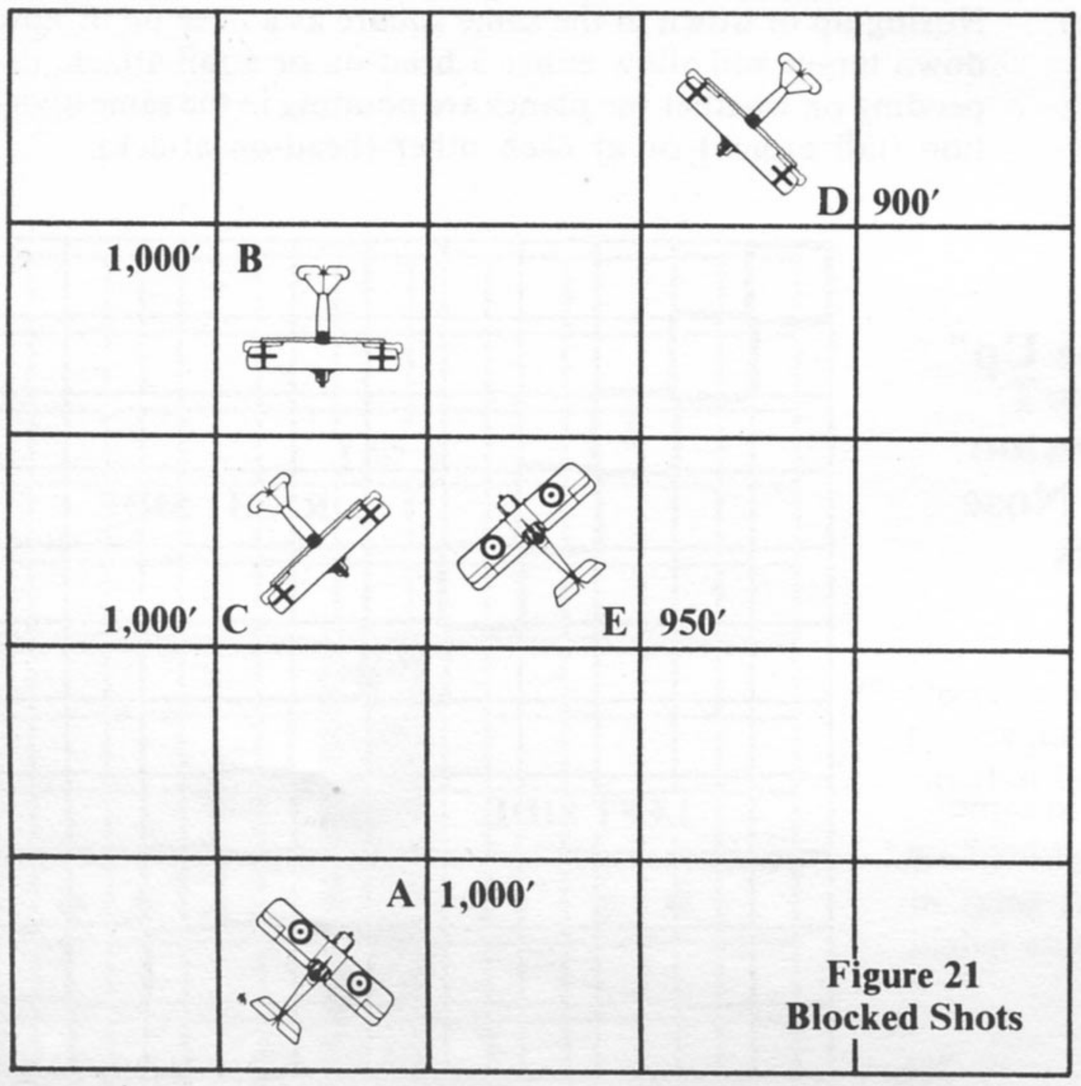


Figure 21
Blocked Shots

Ammunition

In the basic **DAWN PATROL** game, each plane carries 15 bursts of ammunition. One burst is fired each time the plane attacks. After 15 attacks, a plane's guns are out of ammunition and it may not attack again for the rest of the game.

Firing

Attackers can shoot at their targeted planes after all movement is finished. Count the range and roll one die, checking on the table below to see if the shot damaged the target or missed. In either case, be sure to subtract one burst from the plane's ammunition supply.

Range to Target	Target Damaged on a roll of...	Target Missed on a roll of...
50′-100′	1-2-3-4-5	6
150′-200′	1-2-3-4	5-6
250′-300′	1-2-3	4-5-6
350′-400′	1-2	3-4-5-6
450′-500	1	2-3-4-5-6

a) If the target was damaged, then the attacker rolls one die and the result is the number of times the plane was hit.
b) One die must be rolled for each hit to determine its location. The hit location is found by checking the die roll result with the angle of attack on the Hit Location Table.

Hit Location Table

Die Roll	Angle of Attack				
	Head-On	**Side**	**Tail**	**Top**	**Bottom**
1	RW	E	LW	E	E
2	CW*	FF**	LW	LW	RW
3	E	LW/RW	T †	CW**	FF**
4	E	RF†	CW**	RW	LW
5	E	RF	RW	RF †	RF †
6	LW	T	RW	T	T

* Probable pilot hit
** Possible pilot hit
† Possible observer hit if target is a two-seater aircraft.

c) Each hit causes one point of damage to the section of the plane indicated. When the total damage to a section equals or exceeds the maximum amount of damage that section can take (as shown on the plane's hit profile), the plane is shot down. Planes that are shot down should be removed from play at the start of the next game turn.

d) If a hit location is followed by one or more asterisks, there is a chance the pilot or observer was wounded. For non-head-on attacks, the target plane's pilot or observer is hit if the attacker rolls double ones on two dice. If the pilot is hit, the plane is shot down. If the observer is hit, the plane's rear gun(s) cannot be fired. Possible observer hits can be ignored if the target plane is not a two-seater.

e) Head-on attacks sharply increase the chance of hitting the pilot. The attacker rolls one die for each hit on the center wing caused in a head-on attack; the pilot is hit on a roll of one or two.

f) If the location LW/RW is rolled in a side attack, only the wing nearest to the attacker is hit.

Tailing

A plane that is behind its target has an important advantage, even if it does not attack; it can tail (follow) its target on the next turn.

A pilot can tail his target if a) he has a tail attack angle, b) the range to the target is 400 feet or less and c) the attacker has a good rear position.

a) Tail Attack Angle: To tail, the trailing (attacking) plane must be in a position to make a tail attack (see Attack Angles) and be targetted on the lead plane. It is important to note that the trailing plane does not have to actually make a tail attack, it merely has to be in a position where it could make a tail attack.

b) Range: To qualify for tailing, the distance between the attacker and his target must be less than or equal to 400 feet. This range is calculated the same way firing range is determined.

c) Good Rear Position: A plane attempting to tail has a good rear position if the difference in altitude between the trailing and leading planes is less than or equal to their horizontal separation. For example, an attacker 200 feet above and 100 feet behind his target may not tail. A nose up plane shooting at another nose up plane or a nose down plane shooting at another nose down plane always has good rear position.

After all movement and firing is finished, players who intend to tail an enemy plane must say so before the next turn's movement order is rolled.

A tailing plane always moves immediately after the plane it is tailing, so tailing planes never roll dice to find their position in the movement order.

Maneuver Cards

After rolling to determine the movement order, players who are tailing or being tailed must choose their maneuvers, using the maneuver cards. The maneuver cards are bound into the center of the rule book. They must be cut apart with scissors before they can be used. Each card lists a maneuver and the climb and dive restrictions on that maneuver during combat. There are four complete sets; use one for the attacker and one for the target.

a) The pilot being tailed secretly chooses one maneuver card, picking a maneuver he or she thinks the tailing pilot will not expect or a maneuver that will put the plane in a good position to escape or attack. If, for example, the player thinks a wingover will take him away from the battle, then he would select a wingover maneuver card and place it face down on the table.

b) The attacker then chooses several maneuver cards; the exact number depends on the range to the target.

Range:	50'-100'	150'-200'	250'-300'	350'-400'
Cards:	8	9	10	11

Note that the attacker gets more cards if he is farther from the target. This is because an attacker who is far away has more time to react to the target's maneuver.

c) When it becomes the target pilot's turn to move, he or she displays the chosen maneuver card, announces the maneuver and then moves just enough squares to complete the maneuver. (Important note: If the target pilot chose a reversal maneuver — loop, circle or stall — then follow the sequence described under reversals.)

d) Immediately after the target plane moves, the attacker must perform one of the maneuvers from the cards he or she chose. Like the target plane, the attacking plane moves just enough squares to complete the maneuver.

e) The target plane then finishes its move, after which the attacking plane finishes its move.

f) If one of the attacker's cards matched the target plane's maneuver, then the attacker has successfully tailed the target. The attacker may shoot at the target during the attack phase of the turn and may try to tail the target again through its next move.

g) If the attacker cannot match the target's maneuver with one of his or her own cards, then the attacker has been shaken off. The attacker must perform one of the maneuvers he or she picked, let the target finish its move, and then finish moving himself. An attacker who is shaken off cannot attack the plane he or she was trying to tail for one turn or attempt to tail that plane through its next move.

h) An attacker who tails successfully does not have to perform the same maneuver as the target. By choosing the same card, the attacker anticipated the target's maneuver and can follow the target plane using any one of the chosen maneuvers. The attacker also may move one or two spaces before starting the maneuver, if he thinks that will improve his position. However, if the target plane chose to loop or stall and the attacker wants to duplicate the maneuver, he must do so immediately and cannot move one or two spaces before performing the maneuver.

i) When two planes are tailing the same target, the tailing plane that moved last on the previous turn moves first after the target plane. This will reverse the movement order of the tailing planes each turn.

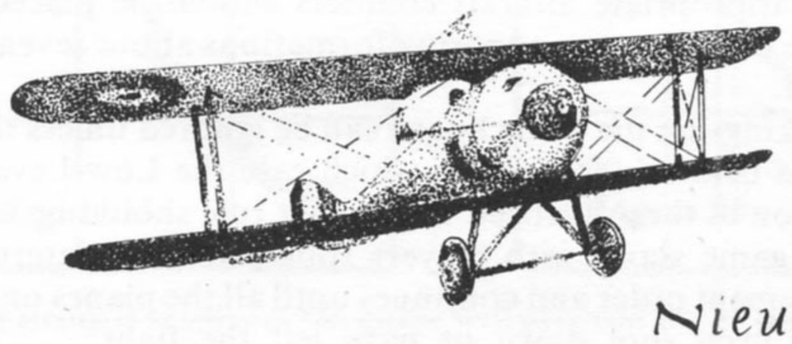
Reversals

Loops, circles and stalls are reversal maneuvers. *A reversal maneuver makes it possible for the target plane to reverse positions by dropping behind its attacker.* If the target plane uses a reversal maneuver, the tailing procedure is different.

a) The target plane moves just enough squares to complete its chosen reversal maneuver.

b) If the attacker can match the target's maneuver with one of the cards in his or her hand, then the attacker must perform that same maneuver immediately or be reversed (see below). Loops must be the same size or larger. If the tailing plane duplicates the maneuver, then movement continues as in normal tailing.

c) If the attacker cannot (or chooses not to) match the target plane's maneuver with one of his or her own, then the attacker is reversed. The attacker must choose another maneuver from his or her hand, perform that maneuver and then finish his or her move before the target plane finishes its move. The attacker cannot attack the plane it tried to tail or tail it through its next move. The target plane must finish its move after the reversed attacker has moved. The target plane may be able to move into a position where it can attack its attacker, and perhaps even tail it into the next turn. The attacker may choose not to follow the target through a reversal maneuver if he sees a more attractive target somewhere else; the attacker simply performs another maneuver and risks being attacked by his previous target.



Nieuport 28

Collisions

If a plane attacks head-on at a range of 200 feet or less, there is a chance it will collide in mid-air with its target. After firing, each pilot writes down one maneuver that he or she will perform at the beginning of the next move. Pilots using the wingover, barrel roll, circle or falling leaf maneuver must specify whether they are moving to the right or to the left.

After the movement order is determined (by dice rolls), but before planes start moving, the two maneuvers are revealed simultaneously and the Collision Table is checked to find out if the planes collide. If they do, then both planes are considered shot down and out of play.

If the planes do not collide, the altitude restrictions on the chosen maneuvers do apply for the rest of the move.

Collision checks are needed only when both planes attack each other in forward head-on attacks. If only one plane makes a head-on attack or one head-on attack was made by a rear observer, then a collision check is not needed.

Collision Table

	Climb	Dive	Straight	Turn Right	Bank Right	Turn Left	Bank Left	Stall	Loop	Circle*	Immelmann	Wingover*	Barrel Roll*	Falling Leaf*	Split-S	Tail Spin
Climb	●							●	●		●					
Dive		●													●	●
Straight			●	●		●				●					●	●
Turn Right			●			●				X		X	X	X		
Bank Right							●					X	X	X		
Turn Left			●	●						X		X	X	X		
Bank Left					●							X	X	X		
Stall	●							●	●		●					
Loop	●							●	●		●					
Circle*			●	X		X				●		X	X	X		
Immelmann	●							●	●		●					
Wingover*				X	X	X	X			X		●	X	X		
Barrel Roll*				X	X	X	X			X		X	X	X		
Falling Leaf*				X	X	X	X			X		X	X	X		
Split-S		●	●												●	●
Tail Spin		●	●												●	●

*** Maneuver must be specified right or left**

• Collision occurs

X Collision possible -- if directions (left or right) are opposite, collsion occurs; otherwise, no collision.

Setting Up To Play

1. Before playing the game, the players should choose a scenario from the SCENARIOS section, or design a scenario according to the Random Combat advanced rule.
2. Players can split into Allied and German teams by rolling the dice. The players with the highest dice rolls play the Germans. The teams should be kept even whenever possible. When two-seater aircraft are used, one player is the pilot and another player is the observer.
3. Players should record their aircraft specifications on a copy of the mission log (included with these rules) or a blank sheet of paper.
4. The appropriate aircraft counters should be placed on the game board in two opposing formations about seven squares apart.
5. Markings on the game board can be ignored unless the battle drops below 1,000 feet, in which case the Low-Level Flying section of the Advanced Movement rule should be used.
6. The game starts with players rolling dice to determine the movement order and continues until all the planes on one side have been shot down or have left the fight.

Example of Play

Figure 22 illustrates one turn in a game between two SE 5s being flown by Captain Charles Abrams and Lieutenant Everett Benson and two Albatros D Vas being flown by Oberleutnant Otto Yorck and Vizefeldwebel Karl Zucker.

First Turn Movement

At the start of the turn, both SE 5s had altitudes of 15,000 feet, Yorck's Albatros was at 15,700 feet and Zucker's Albatros was at 15,300 feet. Since all the planes were within 2,000 feet of each others' altitude, each player rolled two dice to determine the movement order. The rolls were as follows: Abrams 12, Yorck 9, Zucker 6 and Benson 4.

Abrams rolled a 12, so his SE 5 moved first. It moved six squares (60 mph, minimum throttle speed) and climbed 50 feet to an altitude of 15,050 feet.

Yorck's Albatros moved next, diving from 15,700 feet to 15,050 feet. The dive added six squares of movement to its turn speed of 70 mph, so it moved 13 squares. This move put it into position to make a tail attack on Abrams' SE 5 at a range of 100 feet. The attack was announced to the other players.

Zucker's Albatros moved third, diving from 15,300 feet to 15,050 feet to get a 100-foot side attack on Abrams' SE 5. It moved nine squares, seven for its turn speed and two more for its dive of 250 feet. The attack was announced to the other players.

Finally, Benson's SE 5 climbed to 15,050 feet for a tail attack on Zucker's Albatros at a range of 100 feet. It moved six squares, because its turn speed was 60 mph. This attack also was announced to the other players.

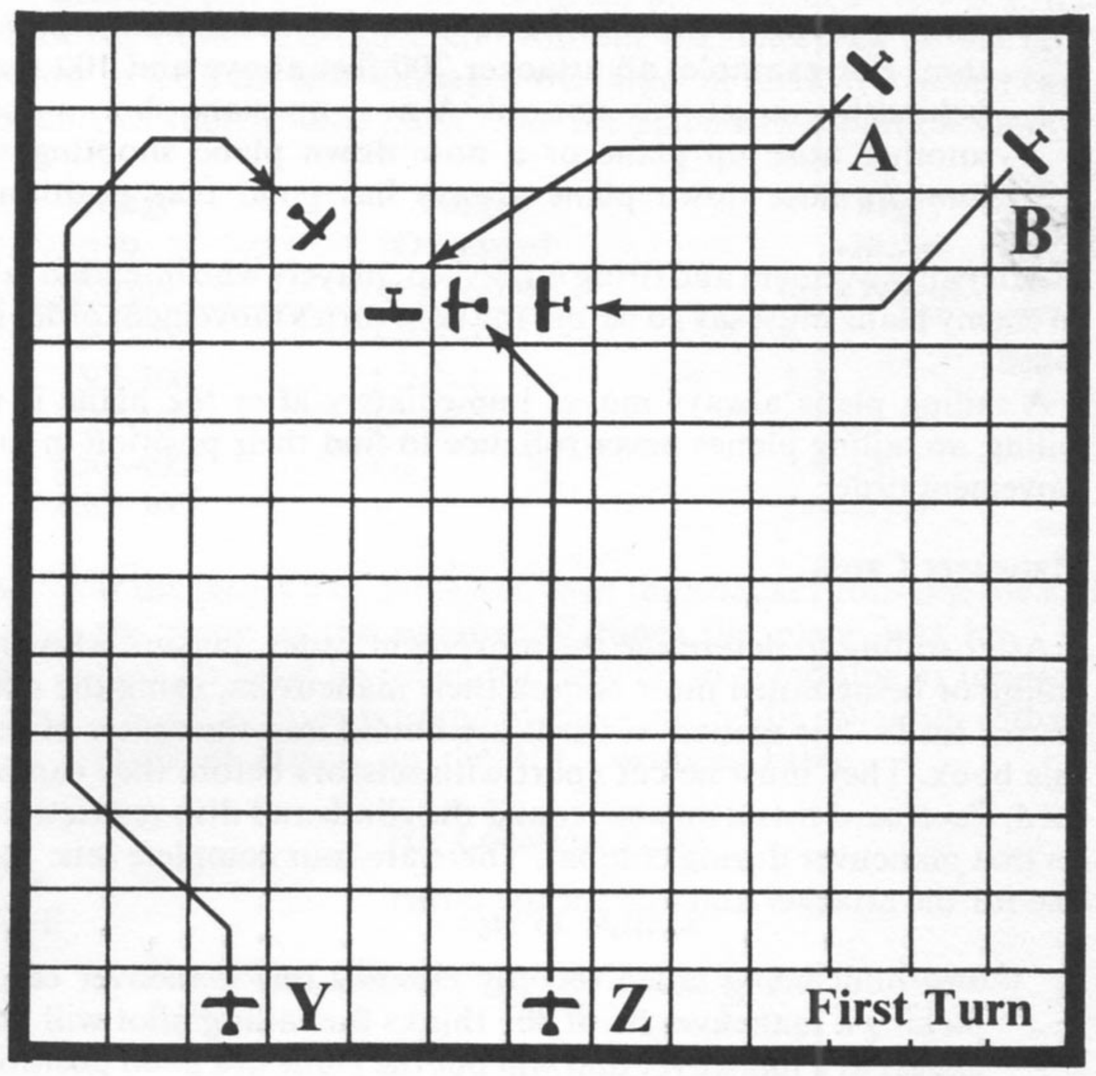


Figure 22

First Turn, Firing

Yorck rolled to see if his target, Abrams' SE 5, was damaged or missed. The pilot rolled a two at a range of 100 feet, so the target was damaged. He rolled again to determine the number of hits, and rolled a three. He then rolled three times to determine what sections of the SE 5 were hit — he rolled two, four and five. Under tail attacks on the Hit Location Table, this indicates hits on the left wing, center wing (*) and right wing. These hits were marked on Abrams' mission log. One final roll was made on two dice to determine whether Abrams was wounded by the center wing (*) hit. The attacker rolled an eight, so Abrams was not hit.

Zucker fired next, rolling a six — a miss!

Finally, Benson fired. The pilot rolled a three, damaging Zucker's Albatros. He then rolled a two, getting two hits in a tail attack. To distribute the hits, he rolled a five and a six, resulting in two points of damage to the right wing.

After this turn the players' mission logs should contain the following data:

Abrams' SE 5 "A"

Die Roll	Altitude	Throttle	Burst/Attack/Result
start	15,000	70	---
12	15,050	60	---

	E	FF	RF	T	LW	CW	RW
Damage Taken:					1	1	1

Benson's SE 5 "B"

Die Roll	Altitude	Throttle	Burst/Attack/Result
start	15,000	70	---
4	15,050	60	1 burst/100'tail/2 hits

no damage taken

Yorck's Albatros D Va "Y"

Die Roll	Altitude	Throttle	Burst/Attack/Result
start	15,700	70	---
9	15,050	70	1 burst/100'tail/3 hits

no damage taken

Zucker's Albatros D Va "Z"

Die Roll	Altitude	Throttle	Burst/Attack/Result
start	15,300	70	---
6	15,050	70	1 burst/100'side/miss

	E	F	RF	T	LW	CW	RW
Damage Taken:							2

Second Turn, Tailing

Figure 23 shows the before and after positions of all four planes. Figures 24, 25 and 26 show the movement of each plane (the movement diagrams are separated to avoid overlapping movement arrows).

After firing was resolved for Turn 1, all four planes were still in the air at 15,050 feet. Yorck announced that he would try to tail Abrams' SE 5. Benson could have tailed Zucker's Albatros, but decided not to.

Then the dice were rolled to determine movement order. Benson rolled a nine and moved first. Zucker rolled a seven and moved second. Abrams rolled a four and moved third. Because Yorck was tailing Abrams, he moved immediately after Abrams and did not roll for his movement order.

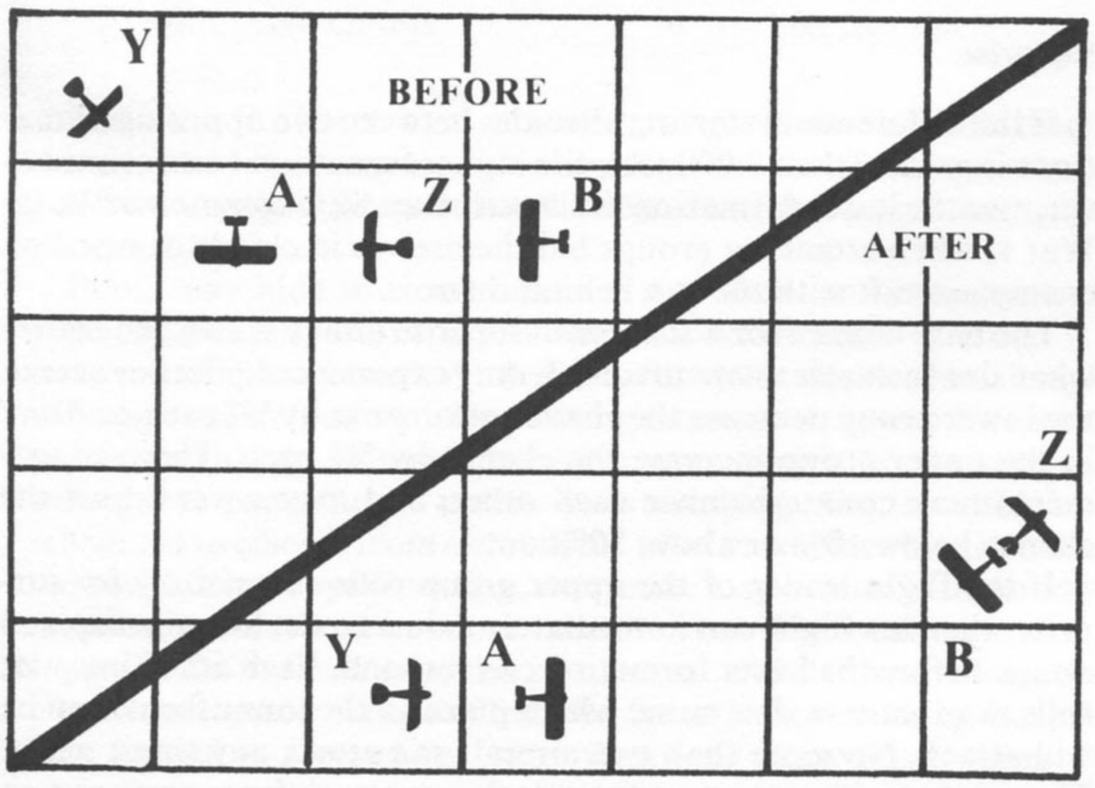


Figure 23

Second Turn, Movement

To begin the turn, Benson's SE 5 performed an Immelmann turn, moved three more squares and stayed at 15,050 feet. Zucker's Albatros performed a wingover, dived 100 feet (to 14,950 feet) and moved directly underneath Benson's SE 5. By diving 100 feet, the plane was able to move eight squares (70 mph throttle speed plus one bonus square for the dive). The pilot then announced he was making a nose up attack at the bottom of Benson's SE 5.

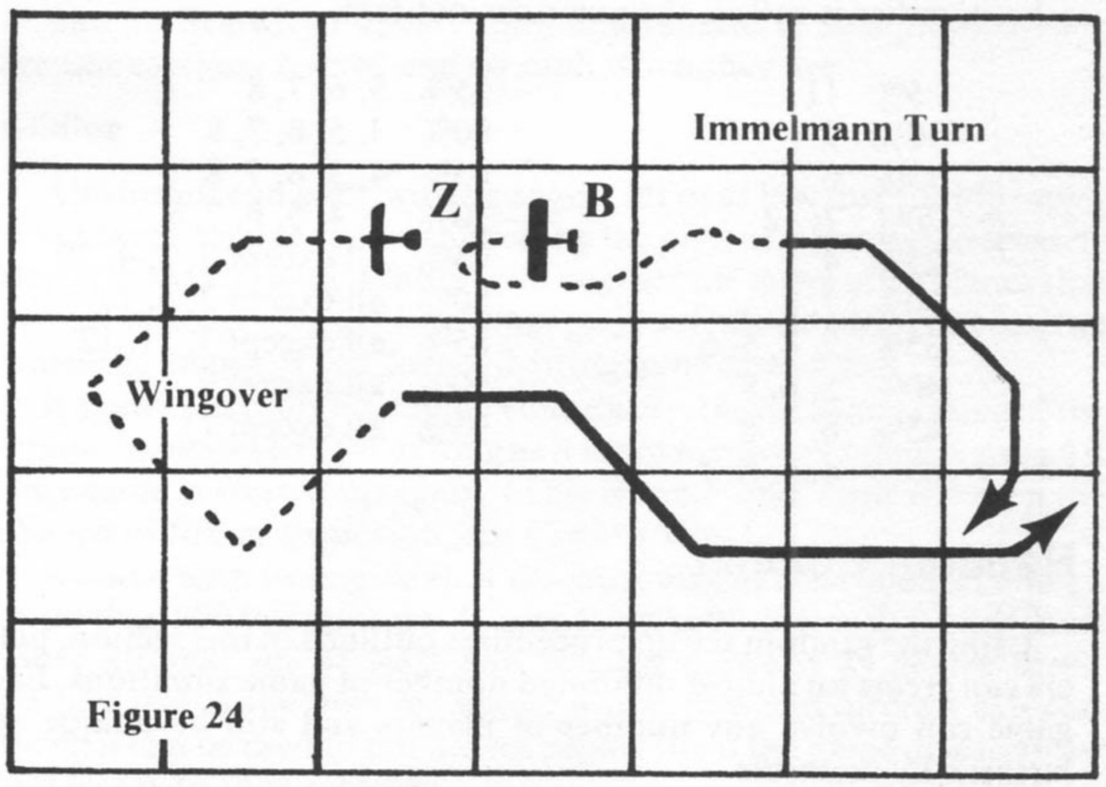


Figure 24

Abrams moved third, revealing his stall maneuver. The plane moved forward one square (counting it as five squares because of the stall). This completed the maneuver, making it Yorck's turn to perform a maneuver.

The player controlling Yorck had eight maneuvers in his hand to choose from. The SE 5's stall was a reversal maneuver, however, so the tailing pilot had to perform a stall or be reversed (which would force him to finish his move before Abrams). To avoid this, Yorck chose to do a stall. He moved his plane ahead one square and counted it as five squares.

Abrams then had to complete his move. He chose to move two more squares and dive 100 feet, finishing at an altitude of 14,950 feet. This move was a total of seven squares (60 mph throttle speed plus one dive bonus square). He then announced he was making a 300-foot tail shot at Zucker's Albatros. Yorck's Albatros then finished its move by diving 100 feet and moving three more squares to take up a tail-attack position against Abram's SE 5 at 14,950 feet. This gave him a 100-foot tail shot and the option to tail again next turn.

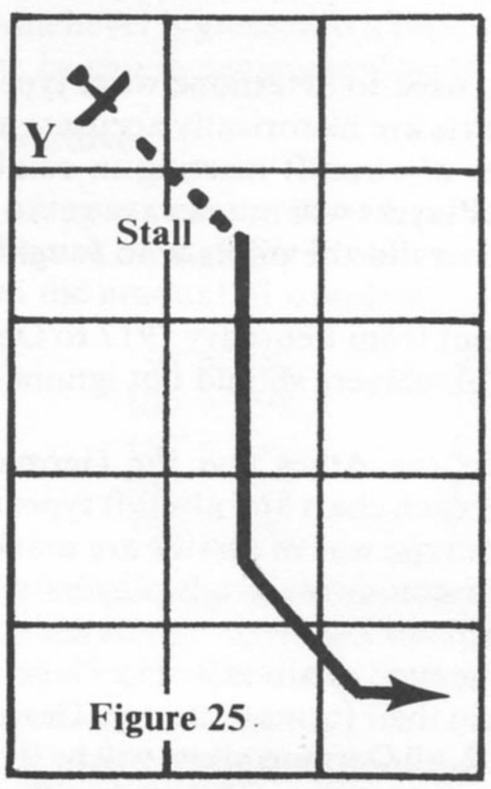


Figure 25

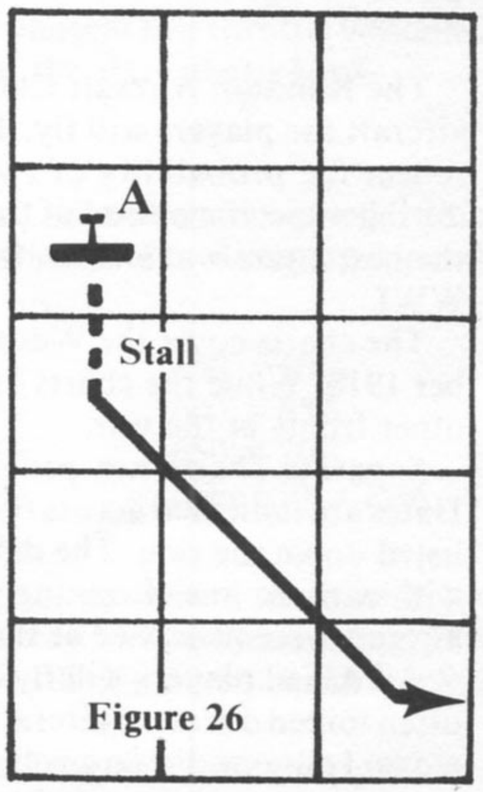


Figure 26

After firing is resolved, the game will proceed to the third turn...

ADVANCED RULES

Percentile Table

The advanced **DAWN PATROL** rules often state probabilities as percentages rather than simple one or two die rolls. If the chance that something will happen is given as a percentage, players should consult the table below and roll two dice. If the dice roll equals one of the numbers shown opposite that percentage, then the event has happened. For example, if the rules state that a gun has a 30% chance of jamming, the player firing the gun should roll two dice. According to the table below, the gun will jam if the player rolls a 7 or an 8. If any other number is rolled, the gun does not jam.

5%	11	55%	5, 6, 7, 8
10%	9	60%	3, 5, 6, 7, 8
15%	6	65%	4, 5, 6, 7, 8
20%	7, 12	70%	3, 4, 5, 6, 7, 8
25%	4, 7	75%	all except 2, 3, 4, 10
30%	7, 8	80%	all except 2, 4, 10
35%	2, 4, 5, 6	85%	all except 3, 11, 12
40%	5, 6, 8	90%	all except 9
45%	6, 7, 8	95%	all except 11
50%	4, 5, 6, 7		

Random Combat

Using the random set-up procedures outlined in this section, players can create an almost unlimited number of game situations. Each game can involve any number of players and still be unique and historically plausible.

Teams

Teams should have the same number of players, whenever possible. Each player rolls two dice, and the players with the highest dice rolls are German. If there is an odd number of players, roll a die to determine which side gets the extra person.

Date

Roll two dice to establish the date of combat. Match the dice combination to the dates on this table:

1/1 Feb 1917	2/3 Sep 1917	3/6 Apr 1918
1/2 Mar 1917	2/4 Oct 1917	4/4 May 1918
1/3 Apr 1917	2/5 Nov 1917	4/5 Jun 1918
1/4 May 1917	2/6 Dec 1917	4/6 Jul 1918
1/5 Jun 1917	3/3 Jan 1918	5/5 Aug 1918
1/6 Jul 1917	3/4 Feb 1918	5/6 Sep 1918
2/2 Aug 1917	3/5 Mar 1918	6/6 Oct 1918

Aircraft

The Random Aircraft Charts are used to determine what type of aircraft the players will fly. The charts are historically accurate and reflect the probability of two types of aircraft meeting in combat during a specific period of the war. Players will not always get to fly the best aircraft available, but neither did the pilots who fought in WWI.

The charts cover the Western Front from February 1917 to October 1918. While the charts are useful, players should not ignore the other fronts of the war.

Separate charts are provided for the Allies and the Germans. Dates are indicated across the top of each chart and aircraft types are listed down the side. The dates each type was in service are marked with a thick line. Looking down a column will tell players what aircraft were in service at that date.

All Allied players will fly the same type of aircraft. The Germans often mixed different aircraft types in their formations, so a German player rolls one die: on a roll of 1 or 2, all German pilots will be flying the same type of aircraft, but on a roll of 3 through 6 each will roll separately for their aircraft.

To use the charts, players locate the date of combat across the top of their respective charts. Each side rolls a die and compares the result with the numbers listed above the thick lines for that date. Any aircraft types that list the number rolled above the thick line may be the plane flown on that date. If only one plane is indicated by the first roll, it is used. If more than one plane is indicated, a second die is rolled and the result is compared to the numbers listed below the lines to find the exact type from among the remaining possibilities. Example: The date of combat is November 1917. The Allied player rolls a 1, the Sopwith Pup and the S.P.A.D. VII. A second roll of 4 picks the Sopwith Pup from those possibilities.

Some Allied aircraft were used by several nations (these types are marked with an asterisk on the chart). Whenever one of these types is flown, roll on the Nationality Tables to determine the owning country.

Location

One die is rolled to determine on which side of the front lines the air battle is occurring:

1 = Allied
2 or 3 = Over the front lines
4, 5 or 6 = German

(The Allies were more aggressive in their patrols than the Germans, so most combat was behind German lines.) To determine the exact distance from the battle's location to any specific lines (or the front), use the procedures outlined in the section on Getting Back.

Altitude

After the aircraft are chosen, one player rolls a die to determine the altitude of the dogfight:

1 or 2 = Low; 3 or 4 = Medium; 5 or 6 = High.

In low altitude games, a second roll of one or two means a ground attack or balloon attack game, if the players want. Players announce if they are flying alone or in formation, then roll to determine exact altitude. One die is rolled for thousands of feet and a second is rolled for hundreds of feet. If the battle is at low altitude, the sum of the figures is the starting altitude. If it is at medium level, 6,000 feet are added. If it is at high level, 12,000 feet are added. It is possible to get various starting altitudes from a minimum of 1,100 feet to a maximum of 18,600 feet.

Example: The game is at medium altitude. A roll of four for thousands and three for hundreds gives a starting altitude of 10,300 feet.

If a cloud bank coincides with the starting altitude of one group of planes or lies between the two formations at the start, adjust the altitude of the group within or above the cloud to 50 feet above or below it on the side of the opposing formation. This will not alter the chance of surprise, if it is possible.

Surprise

If the difference in starting altitudes between two opposing formations is greater than 2,000 feet, the higher formation has a chance to surprise the lower formation. Such surprises were common in World War I, when attacking groups hid themselves in clouds or dived on enemy aircraft with the sun behind them.

The base chance for a successful surprise attack is 20%, no matter what size formations are involved. Any experienced pilots or aces in the lower group decrease the chance of surprise by 5% each, and any in the upper group increase the chance by 5% each. These adjustments may counterbalance each other, and may never adjust the chance below 10% or above 30%.

If the flight leader of the upper group rolls successfully for surprise, then his flight can immediately dive into the lower group and attack before the lower formation can respond. Each attacking pilot rolls randomly to determine which plane in the lower formation he will attack. No more than two aircraft can attack any single plane. The pilots making the surprise attack can attack from any position except head-on, and adjust their altitude accordingly.

If any planes attacking with surprise come into the fields of fire of the planes in the lower formation, pilots and observers must roll a one or two to react and fire on the attackers. Even if the roll is successful, they can fire only a short burst.

After a surprise attack, the game proceeds normally with a scrambled movement order for the following turn.

If a roll for surprise is unsuccessful, the upper group is spotted and the two formations approach each other as they would normally.

Wind

Wind usually is not an important factor, but it sometimes influences landing and taking off.

Wind direction and strength should be determined at the start of the game. Roll two dice to determine from which direction the wind is blowing:

2	E	8	W
3	N	9	SW
4	NE	10	SE
5	NW	11	S
6	W	12	E
7	W		

Find the wind speed by rolling one die:

1	Calm
2	Negligible Breeze
3	Light Wind of 10 mph
4	Light Wind of 10 mph
5	Medium Wind of 20 mph
6	Strong Wind (20 mph below 5,000 feet, 30 mph at 5,000 feet and above)

At altitudes of 5,000 feet or more planes will drift with the wind. All planes are moved one square downwind for every 10 mph of windspeed at the end of each turn. Historically, prevailing winds on the Western Front tended to blow air battles deeper into German territory.

Clouds

Before the game starts, one die is rolled to determine the number of cloud banks in the area. Another die is rolled for each bank to determine its thickness.

1	One Bank	1	300 feet thick
2	One Bank	2	400 feet thick
3	Two Banks	3	500 feet thick
4	Three Banks	4	600 feet thick
5	No clouds	5	700 feet thick
6	No clouds	6	800 feet thick

The altitude of each bank is found using the method described in the section for starting aircraft altitudes. (See the altitude section of Random Combat).The result is the altitude of the lower boundary of the cloud bank.

Pilots may hide in cloud banks at any time, and may leave the game by escaping into them. Once an aircraft enters a cloud it is removed from the board. At that time the pilot decides how long he will stay in the cloud and, by plotting movement, determines when, where, and at what altitude he will emerge from it (at the start of a subsequent game turn), unless he is escaping. On the turn he is scheduled to emerge from a cloud, the pilot must place his aircraft on the board in its proper location, determine his position in the random movement order and in his turn begin from that location and altitude. On the turn of exit, the plane must end its move outside all cloud banks (thus being unobscured for at least one turn). No pilot may remain in a cloud for more than four consecutive turns. An aircraft above a cloud may not pass through the cloud and attack a plane below it on the same turn.

Advanced Sequence of Play

Players who use the advanced and optional **DAWN PATROL** rules should follow the advanced turn sequence outlined on the back cover of the rule book rather than the turn sequence from the basic game. This outline incorporates full use of the different Advanced Rules.

Advanced Movement

Minimum Speed

The minimum speed for most planes in powered flight is 60 mph. However, the Fokker Dr I, Sopwith Triplane, Nieuport 17 and Hanriot HD-1 have minimum speeds of 50 mph. The Halberstadt CL IV and the Sopwith Pup have minimum speeds of 50 mph when they are not carrying bombs and 60 mph when they are.

Gliding

An aircraft can glide with its engine off or at low throttle (40 mph).

A plane's engine can be shut off by the pilot or damaged so severely that it stops running. Planes with engines off move after planes that are out of control but before other planes. Only flexible guns can fire when the engine is off; forward-firing guns cannot fire.

If a pilot shuts off his engine voluntarily, the hit factor rating of the engine increases to 7 for as long as it is not operating,but reverts to 6 if the engine is started up again. (This is sometimes done to lessen the chance of fire or explosion; see Critical Hits.)

A plane with its engine shut off must dive at least 400 feet and no more than 900 feet per turn. It cannot make 90 degree turns and must move straight for at least two squares between 45 degree turns. Falling leaf is the only maneuver a non-powered aircraft can perform; it can be used to put out an engine fire if the plane dives at least 800 feet with four sideslips.

A non-powered plane gets a movement bonus the first time it moves after the engine quits. One-half of its previous throttle speed, rounded up, is added to its movement. For example, if a plane moving at 90 mph takes a critical hit that stops the engine, it gets five extra squares of movement on the next turn. These five squares are added to the movement the plane gets by diving 400 to 900 feet.

If a pilot shuts off his plane's engine and then later turns it back on, the plane's throttle speed is immediately set at 60 mph.

A plane's throttle speed may be lowered to 40 mph by a critical hit or voluntarily by the pilot. Planes at low throttle move after non-powered planes but before planes flying with full power. A plane flying at low throttle can fire any of its guns.

Planes using low throttle must dive between 300 and 1,200 feet each turn. They cannot make 90 degree turns and must move straight at least two squares between 45 degree turns. The only maneuver form; it can be used to attempt to put out an engine fire if the plane dives at least 800 feet with four sideslips.

On the turn a plane cuts to low throttle, it gets a carryover bonus equal to half its previous throttle speed, rounded up, or 40 mph, whichever is greater. If a pilot sets his plane at low throttle voluntarily, he can increase speed to 60 mph at the start of any turn.

Overdive

A pilot can choose to dive his aircraft more than its normal limit at the risk of having it break apart. The chance of breaking up depends on the amount of overdive:

50′ = 10%	300′ = 35%	550′ = 60%
100′ = 15%	350′ = 40%	600′ = 65%
150′ = 20%	400′ = 45%	650′ = 70%
200′ = 25%	450′ = 50%	over 650′ = 75%
250′ = 30%	500′ = 55%	

Overdives may be involuntary during out-of control movement, but the maximum voluntary overdive that may be attempted by any pilot is 300 feet in one turn. Stress from overdiving does not accumulate from turn to turn.

Victory credit for a plane which breaks up in a voluntary overdive may be awarded to any enemy pilot who fired on that plane in the prior game turn.

Out-of-Control Movement

Planes falling out of control always move first, followed by gliding aircraft. Any pilot intending to tail a plane which goes out of control is freed from the obligation to tail and determines his place in the order of movement by the normal dice roll. Pilots may fall out of control for any of three reasons:

1. unconscious pilot
2. severe or critical damage to a section of the plane other than the engine.
3. loss of forward speed.

Pilot unconsciousness is the most common cause of loss of control (see Wounded Pilot). If a pilot is unconscious, his plane will fall out of control the entire turn. If the pilot wakes up, he can regain control of his aircraft unless it ended the turn in a spin.

Severe damage also can cause a plane to fall out of control. Any time a plane takes its maximum number of hits in any section except the engine, it is considered shot down and it falls out of control. Critical hits occasionally have the same effect. For example, a plane that cannot bank right because of an aileron hit will fall out of control if another critical hit jams the controls in a bank right.

The minimum speed needed to remain in controlled powered flight is 60 mph (50 mph for some types). If a plane's speed is reduced below this by critical hits, the plane will fall out of control.

A pilot in danger might also voluntarily put his plane out of control in order to fool the enemy into thinking he was shot down. The pilot can control the distance his plane dives, but may have difficulty recovering if he ends his turn in a spin.

An out-of control plane's movement is determined by dice rolls. The first roll determines how far the plane will fall, based on its basic dive rate.

1	Maximum dive minus 200 feet
2	Maximum dive minus 100 feet
3	Maximum dive
4	Maximum dive
5	Maximum dive plus 100 feet
6	Maximum dive plus 200 feet

Maximum dive is the plane's original maximum dive. If the plane's dive rate was reduced by a critical hit, it will still dive its original maximum. The difference between the original maximum and the reduced dive rate is overdive. For example, if a player with a Fokker D VII that is falling out of control rolls a six, the plane will fall 1,700 feet. This is a 200-foot overdive. If the D VII's dive rate had been reduced to 1,400 feet, it would be a 300-foot overdive.

The plane's current turn speed, taking into account reductions caused by critical hits, is added to the distance the plane falls to determine how many squares the plane moves.

The exact path of the out-of-control aircraft can be plotted from square to square by rolling one die for every square moved:

Out-of-Control Movement

1	Left
2	Left
3	Straight
4	Spin
5	Right
6	Right

A spinning aircraft expends movement by dropping several hundred feet in an uncontrollable vertical spin. The distance the plane spins is determined by rolling one die, multiplying the result by 100 and adding 400 feet. The resulting fall will be from 500 to 1,000 feet. Aircraft always come out of a spin facing either north or south. Roll one die: 1-3 = north, 4-6 = south.

If a plane is still in a spin when it reaches the end of its movement, it must continue to fall out of control on the next turn. The leftover squares of the spin are the first squares of movement for the next turn.

To illustrate this process, the out-of-control movement of a Fokker D VII has been plotted. The Fokker is falling 1,700 feet and has a turn speed of 90 mph, so it will fall 26 squares. The numbers listed below in parentheses are the die rolls on the Out-of-Control Movement table. Next to them is the result from the table, and on the right is a tally of the movement points expended by the aircraft up to that point.

(1) Left	1
(2) Left	2
(1) Left	3
(6) Right	4
(3) Straight	5
(3) Straight	6
(4) Spin (5) 400′ + 500′ = 9	15
(5) Recover from spin facing south	
(5) Right	16
(3) Straight	17
(2) Left	18
(3) Straight	19
(4) Spin (3) 400′ + 300′ = 7	26
(2) Recover from spin facing north	

In this example, the Fokker twisted and turned and spun twice, moving 26 squares. After each spin, a roll was made to determine which way the plane would face when it came out of the spin. The Fokker D VII recovered from its spin at the end of its 26th square, meaning the pilot might have a chance to regain control.

Planes that are out of control can be shot at by enemy planes, but if a plane ends its turn in a spin it is dropping too rapidly and unpredictably to be shot at that turn.

When a plane's fall is of no importance to the other players an abstract method can be used to determine the plane's fate.

The amount of altitude lost is determined using standard rules. If the aircraft is forced to fall beyond its limit, there is a chance it will break up in the overdive. If the plane does not break up, its final location (in relation to where it started the turn) can be rolled randomly. One die is thrown for the direction the plane fell as it dropped out of control: 1 or 2=north; 3=east; 4=west; 5 or 6=south. Two dice are rolled and the plane is placed that many squares away from its former position facing the direction it fell.

Since ending in a spin is a danger when falling out of control, there is a base 40% chance each turn that a plane falling out of control has ended its move in a spin and must continue falling out of control the next turn.

This rule does not replace the detailed rules for falling out of control — it is only a quick method to use when the exact movement is not needed.

Low-Level Flying

When a dogfight drops to a point where altitude is being measured in hundreds of feet rather than thousands, pilots start to be concerned about what is on the ground. The **DAWN PATROL** game board shows a typical area behind the lines, with several farms, small hills, an airfield and a railroad station.

Generally, 50 feet is the lowest possible altitude for flight. There are two exceptions to this; planes that are landing or taking off and planes that are over a river that is more than one square wide can fly at zero feet.

Pilots flying at low level must watch for ground obstacles. Anything that could interfere with flight by rising to 50 feet or more above ground (trees, buildings, smokestacks, telegraph wires, hills, bridges, etc.) is considered a ground obstacle. Each obstacle fills one entire square.

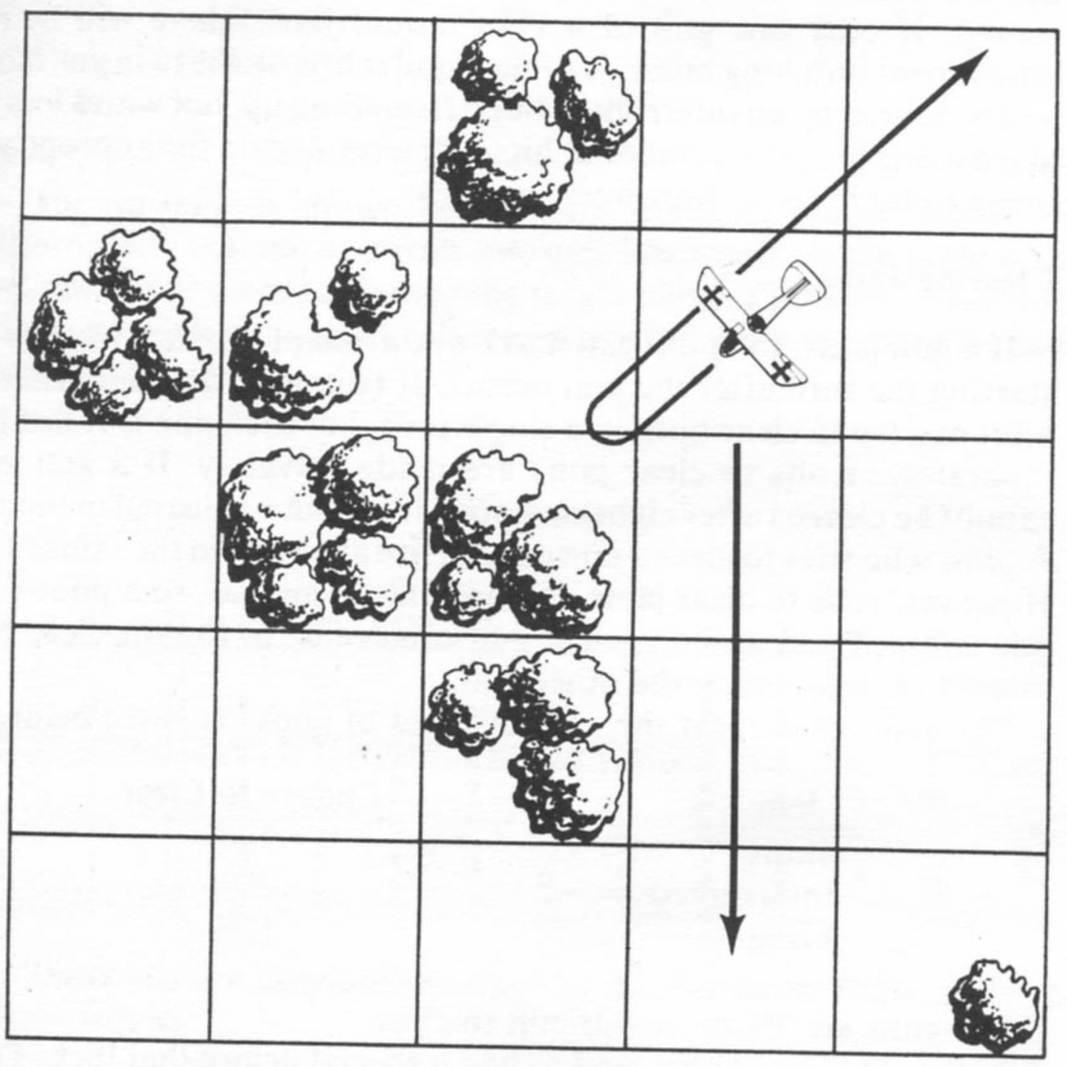
An obstacle is a hazard to flight at altitudes up to its height. A 100 foot tree, for example, is an obstacle to flight at both 50 and 100 feet and cannot be flown through at either altitude. Obstacles such as factory smokestacks may be even higher than 100 feet. Most other obstacles are hazards only at 50 feet. Hills and rising contours are obstacles at their height and raise any obstacles on them proportionately higher; a tree on a 100-foot-high hill is an obstruction at 200 feet.

If a plane starts its movement at the same altitude as an obstacle, it can pass over the obstacle only by climbing so it finishes its turn at an altitude greater than that of the obstacle. Climbing over a ground obstacle and then dropping back to the plane's starting altitude is not allowed in the same game turn.

If a plane starts its movement at a lower altitude than an obstacle, the plane cannot climb over the obstacle unless there is at least one clear square between the obstacle and the plane's starting position. If the plane is adjacent to the obstacle, it can climb over the obstacle if it has a climb rate of 350 feet or more. If the plane does not have high enough climb rate or a clear square to climb through, it must attempt an immediate loop or Immelmann turn to avoid the obstacle. Even if one of these maneuvers is attempted, there is still a 15% chance of a crash (5% for experienced or ace pilots) due to misjudgment. For example, an Albatros D V at 50 feet could fly over a tree (100 feet high) only if it started its move at least 200 feet from the tree. It could climb over the tree and end its move at 150 feet or higher. If the Albatros was adjacent to the tree, it would have to perform a loop or Immelmann turn, because its climb rate is only 300 feet.

Descending over an obstacle requires that the aircraft begin its turn at an altitude higher than the obstacle, and that one clear square is between the ending position and the obstacle for every 50 foot difference in the plane's ending altitude and the height of the obstacle.

Aircraft can pass around ground obstacles in adjacent squares, but only along a square side, not diagonally. In the diagram below, the Albatros at 50 feet could avoid the trees by performing a loop or Immelmann turn or by banking to the left.



A plane that hits a ground obstacle is demolished. The pilot has a 10% chance to survive the crash.

Players may at some time feel the need for more flying space. The game board can be expanded by purchasing a sewing board or cutting board, a 36″ x 72″ folding sheet of cardboard marked in one-inch squares. These boards can be decorated as desired. Some possibilities are the front with its trenches and devastated terrain, an aerodrome or a town. Ground features should be recognizable to new players. Open areas that are possible landing sites should be left unmarked so the roughness can be determined by a die roll when someone tries to land (see Landing & Taking Off).

Escape From Combat

There are two ways to escape from combat. The first is to move into a cloud and declare that you have escaped. The second is to declare your intention to escape and then fly three consecutive turns without shooting or being shot at. Once an aircraft has escaped from combat, it is considered out of play and may not return to the action.

A plane that has been prevented from escaping by an enemy aircraft may return to combat or try to escape again by declaring its intent. A pilot who has declared his intention to escape but has not yet escaped may return without penalty, but if he engages again and later announces his intention to escape a second time, he may not return.

The intention to escape from combat always is declared before the random order of movement has been determined. Pilots of planes that automatically must move first in a turn (those gliding, out of control, etc.) may not declare an intention to escape.

If a plane is damaged to the point where the pilot must land immediately, see Landings and Takeoffs. If the pilot thinks he can make it back to his own airfield, or wants to try to at least reach his own lines, see Getting Back.

Time Limitations

To simulate the fast pace of aerial combat, players can set a time limit on moves. Suggested time is about 30 seconds for each player's turn. Each turn of game play is estimated to be approximately 20 seconds of scale time.

Attack Limitations

Since air combat in World War I was individualized, even in a large dogfight, it usually was not possible to make an effective gang attack. Therefore, no more than two planes may attack an enemy aircraft at one time. More than two players may attack only if it is impossible for them to get an equal or a closer shot, other than head-on, at another enemy plane. Any pilot exceeding this limit when an acceptable alternate shot is available will miss automatically, with normal jamming chances and ammunition expenditure. Observes firing rear guns are not counted against this limit.

Advanced Combat

Advanced combat is not a single rule per se, but incorporates all the rules which follow.

Limited Intelligence

A pilot in a **DAWN PATROL** game has an important advantage over his World War I counterpart — he knows a lot of what is going on at a particular instant in a dogfight. Historically, each pilot had his hands full with his own aircraft and his principal goal was simple survival. If he was deft enough with his aircraft and quick in eluding enemy bullets, he might get a chance to attack effectively himself. Rarely could he see more than a small part of the overall combat.

Because the game does not move as quickly as actual combat, players are more aware of what is occurring. Certain procedures can be followed, however, to create a more realisitic atmosphere.

Many similar types of aircraft on both sides are indistinguishable to the enemy. An Allied pilot might know he was up against an Albatros two-seater without recognizing the specific model. The same uncertainty can prevail in the game when a pilot recognizes a type (from the playing piece) but not the exact model. This would hold for all similar types: Albratros fighters, the two models of the Camel, the Halberstadts and the others. Players need not provide any information on the exact model they are flying.

World War I aircraft were not equipped with radios, so communication stopped when combat started. Therefore, game-related information and tactical hints should not be exchanged between players once the game is underway. The only exceptions to this rule are two-seater crews, who may discuss details and tactics between pilot and observer.

Many of the die rolls occurring during the game also can be kept secret from enemy players, especially rolls for gun jams and critical hits. These can be concealed with a teammate witnessing the die rolls or, if the players trust each other, they can institute an honor system each player to make such rolls on his own. This creates a situation where a player may not be aware of critical problems his wingman is having. An honor system also can be used for rolls determining the number of hits scored. A player rolls in the open (for his opponent's benefit) for a hit or miss, but conceals his roll for the number of hits

scored. This restricts the opponent's knowledge of gun jams. It also requires players who trust each other implicitly. Since errors might go unnoticed, each player in such games must be fully familiar with the rules.

Ammunition Expenditure

This rule lets players choose the amount of ammunition fired in each burst. It should be used along with the other Advanced Combat rules.

Each plane carries a full load of ammunition (measured in ammo points) which can be fired in long, interrupted or short bursts. The ammunition is stored either in drums (which can be reloaded) or belts (which cannot be reloaded). Each aircraft's armament is listed on its aircraft reference card. The different types of guns carry the following number of ammo points:

Drums

Lewis, Parabellum, Revelli	10 ammo points

Belt

Spandau*	50 ammo points
Vickers	40 ammo points
Marlin, Schwarzlose	30 ammo points

*During October 1918, shortages are possible; roll one die for the entire flight: 1, 20 ammo points per gun; 2 or 3, 30 ammo points per gun; 4 or 5, 40 ammo points per gun; 6 normal allotment of 50 points per gun.

Separate records must be kept for the ammunition supply of each gun, as occasional differences can occur due to jams and other problems.

Firing one of the three types of bursts uses the following amounts of ammunition:

Burst	Ammo
Long	four points
Interrupted	three points
Short	two points

When firing twin-mounted guns together, both guns expend the same amount of ammo. Only Fokkers and Albatroses can fire one gun at a time. Wing guns always fire independently, and can fire a different burst than the deck gun.

When leftover bursts of one point are fired, subtract one hit from the number of hits scored. At least one hit is always caused if the target is damaged, however.

The type of burst being fired must be declared by the pilot before the dice are rolled for damage. If a pilot neglects to announce what burst he is firing, it is assumed to be a long burst.

Firing, reloading and unjamming are mutually exclusive and only one of the three can be done in a particular turn (see the following sections).

Reloading

Guns that use ammo drums are the only types that can be reloaded during combat. Once a drum is emptied, it must be replaced before the gun can be fired again. The Parabellum and Revelli are observer's guns; the Lewis is both an observer's and pilot's gun.

If a pilot tries to reload a Lewis gun, he must fly straight at least five squares and then roll a 1, 2 or 3 on one die to successfully rearm the gun. If an enemy aircraft attacks his plane on the turn of reloading, the pilot must roll a 1 to reload successfully. Experienced or ace pilots can reload a Lewis on a roll of 1-4 normally or on a 1 or 2 if under fire. Four extra drums are carried in the cockpit for the Lewis gun.

An observer can reload one gun per turn automatically if the plane flies five squares straight at any time during its movement. If this straight movement is not made, the observer must roll 1-4 to successfully rearm the gun. Two turns are needed to reload both guns of a twin mount.

If an observer has a twin gun mounting and wishes to reload one of the guns during a game turn, he must decide whether or not to attempt the reloading immediately after the two-seater finishes moving and before other planes have moved. If he elects to reload, he will not be able to fire the other gun that turn.

All two-seaters carry four extra ammunition drums for the observer.

Gun Jamming

The machine guns that were mounted on aircraft in WWI had a tendency to jam under constant use. A pilot whose guns jam in a dogfight can be in serious trouble.

Firing a machine gun several turns in a row increases the chance it will jam due to the heat and rapidity of firing. Every time a gun is fired, there is at least a 5% chance it will jam. When guns that are cool are fired for the first time, a short or interrupted burst has a 5% chance of jamming and a long burst has a 10% chance of jamming. For each successive turn that a long or interrupted burst is fired, 5% is added to the chance of jamming. If a short burst is fired, the chances remain the same. Five percent is subtracted from the chance of a jam as the guns cool, for each turn the guns are not fired, until 0% is reached.

Players must roll for gun jams before rolling to hit or to determine damage. When firing twin guns, roll for jams on each gun separately. Jams are always kept secret from opposing players.

If a jam occurs during a long burst, the full burst is fired. If a jam occurs during an interrupted burst, half the number of hits (rounded up) are scored. If a jam occurs during a short burst, no hits are scored. If only one gun of a twin mount jams, there will be no adjustment on a long burst; ¾ of the regular hits on the twin gun table will be scored by an interrupted burst (rounding up, but with a loss of at least one hit); the number of hits is determined on the appropriate one-gun table for a short burst.

Clearing Jams

If a gun jams, the pilot can make one attempt per turn to clear it, starting the turn after the jam occurs. If twin guns are jammed, the pilot can try to clear both in a single turn, but each gun is rolled for separately. Rolls to clear jams are made privately. If a gun jam cannot be cleared after eight attempts, it cannot be cleared in the air. A pilot who tries to clear a jam cannot fire any guns in the same turn. However, rolls to clear jams are made after combat, so a pilot with one jammed gun and one clear gun can decide to fire the clear gun instead of unjamming the other gun.

The chances to clear the various types of jams are listed below:

Jam	Chance to Clear
Short	35%
Interrupted	25%
Long	15%

Lewis guns are 5% more difficult to clear.

Albatros D V and D Va models had a special device that locked the controls, allowing the pilot to use both hands to work on a gun jam. Albatros pilots can add 5% to their clearing chances if they use the device. They must fly in a straight line without diving or climbing for the complete turn.

Observers always get a +5% bonus when trying to clear jams.

Range/Firepower Effectiveness

This rule introduces variations in the effectiveness of different types of guns at different ranges. It should be used along with the rule on ammunition expenditure.

On all shots, the pilot picks the type of burst fired (long, interrupted or short), rolls to hit, and then checks the table below corresponding to the number and mount of guns on this aircraft, the range of the attack and the type of burst. The result is the column that should be used on the advanced Hit Table to determine the number of hits scored. For example, a Pfalz with two deck-mounted guns firing a short burst at a range of 400 feet would use table G to determine the number of hits scored.

Twin Guns Deck Mounted

	L	I	S
50-100′	K	K	J
150-200′	J	J	I
250-300′	J	I	H
350-400′	I	H	G
450-500′	H	G	F

Single Gun Deck Mounted

	L	I	S
50-100′	G	G	F
150-200′	F	F	E
250-300′	F	E	D
350-400′	E	D	C
450-500′	D	C	B

Single Gun Wing Mounted

	L	I	S
50-100′	F	F	E
150-200′	E	E	D
250-300′	E	D	C
250-400′	D	C	B
450-500′	C	B	A

The hit table is shown below. The attacking player locates the appropriate column and rolls one die. The result on the table is the number of hits scored against the target plane. Pilots that have both deckand wing guns must roll separately for the hits scored by each and add the results.

Hit Table

Die Roll	A	B	C	D	E	F	G	H	I	J	K	L	M
1	1	1	1	1	1	1	1	1	2	2	3	4	5
2	1	1	1	1	1	1	2	2	2	3	4	5	6
3	1	1	1	1	2	2	2	3	3	4	5	6	7
4	1	1	1	2	2	2	3	4	4	5	6	7	8
5	1	1	2	2	3	3	4	4	5	6	7	8	9
6	1	2	2	3	3	4	4	5	6	7	8	9	10

These hits are distributed using the Hit Location Table, as in the Basic Game.

Deflection Shooting

In order to hit a moving plane from the side, top or bottom, a pilot had to shoot ahead of the target. This type of shooting was called deflection shooting. Deflection shooting was more difficult than shooting at a target that was straight ahead, so adjustments should be made for the following types of shots:

Deflection shots — all side attacks and all shots by gunner observers of two-seaters should be shifted left one column on the Hit Table.

Non-deflection shots — all attacks on planes landing, taking off, taxiing, or gliding, all head-on attacks where the altitude difference between attacking planes is 100 feet or less and both planes are approaching, and all second-turn tail attacks where the tailing plane has successfully tailed the target one or more consecutive turns are shifted right one column on the Hit Table.

Semi-deflection shots — all top and bottom attacks, all first-turn tail attacks and all head-on attacks where the altitude difference between attacking planes is more than 100 feet are treated as normal.

No adjustments can shift fire higher than column M for twin guns, column I for single guns, or lower than column A.

Wounded Pilot

If this rule is used, a plane is not automatically shot down if the pilot is hit. Instead, a die is rolled to determine how badly the pilot is hurt.

	Hits taken this turn					
Roll	1	2	3	4	5	6+
1	NE	LW	LW	CW	CW	D
2	LW	LW	CW	CW	D	D
3	LW	CW	CW	D	D	D
4	CW	CW	D	D	D	D
5	CW	D	D	D	D	D
6	D	D	D	D	D	D

NE: No Effect. The wound has no effect other than reducing the pilot's landing chance 15%.

LW: Light Wound. The pilot's turn speed is reduced by 10 mph (but never less than 60 mph) and his landing chance is reduced 15%. If the pilot is flying above 10,000 feet, there is a 10% chance every turn that he will pass out. There is a 5% chance every turn that he will pass out if his altitude is 10,000 feet or less.

CW: Critical Wound. The pilot must try to land immediately, and his landing chance is reduced 20%. There is a 30% chance he will pass out each turn.

D: Dead. The pilot is killed. His aircraft is shot down out of control.

The player who was hit rolls secretly, and the other players do not know the result until the wounded pilot is on the ground.

There is constant danger that a wounded pilot will pass out. A player with a wounded pilot must roll to remain conscious at the start of every turn. If the pilot passes out, his aircraft will fall out of control until it crashes or the pilot regains consciousness. An unconscious pilot has a 30% chance to wake up each turn. All rolls to remain conscious or regain consciousness are made at the start of the turn.

A critically wounded pilot moves in his normal movement order, but must dive to the ground immediately and try to land. He must try to land as soon as he reaches the ground, no matter what his location is.

A critically wounded pilot cannot fire his guns except to return fire against a head-on attacker. The range on such a shot can be no more than 300 feet, and the wounded pilot must shift left two columns on the Hit Table.

A wounded observer has the same chance of passing out as a wounded pilot. An observer with a light wound can fight, but he must shift left one column on the Hit Table and has only a 50% chance to reload his guns. A critically wounded observer can fire only if he rolls a one or two, and can only shoot at planes that are attacking the two-seater. Maximum range for a critically wounded observer is 300 feet, and he must shift left two columns on the Hit Table.

If a pilot or observer is wounded more than once, the effects of the wounds are cumulative:

LW + LW = CW, LW + CW = D, CW + CW = D.

Additional NE wounds have no effect.

Critically wounded airmen who survive their injuries must make an additional check to determine if they will recover and be able to fly again. A roll of one or two means they are incapacitated and unable to fly again.

German Parachutes

The Germans pioneered the use of parachutes for fighter pilots in 1918. Although the Allies also had parachutes, they were not issued to the air forces for fear they would destroy the pilot's will to fight!

While many pilots in the German air service carried parachutes, almost as many did not, believing that the disadvantage of storing a bulky device that might not function anyway was not outweighed by its apparent usefulness. Therefore, only about half of the German pilots carried the devices in 1918. In games set after February 1918 (July 1918 for Austro-Hungarians), all German players, regardless of rank, may roll once before combat starts to determine if they are carrying a chute. A roll of one or two means a parachute is being carried. Aces can subtract one point from the roll. Players must roll for parachutes before the game begins. If they forget, it is assumed they took off without one.

A pilot who is critically wounded or whose plane has been in a collision must roll a one or two (in one attempt) to jump from the plane. Jumps can never be made from exploding planes or at altitudes below 1,500 feet. A pilot can jump in any other situation.

A pilot with an unopened chute will fall 3,000 feet per turn. Chutes must be opened within three turns after jumping and before 1,500 feet is reached. Open parachutes drop 400 feet per turn and drift with the wind. Players cannot shoot at pilots who parachuted from their planes.

A pilot who jumps successfully has an 80% chance to survive if previously unhurt, 60% if lightly wounded and 30% if critically wounded.

Optional Tailing

The basic rules use a tailing procedure that uses the 16 maneuvers in the game. This optional rule can speed up play and increase realism.

This system divides the maneuvers by directions into four groups. The directions indicate which way the lead plane might go when starting its evasive maneuver. By choosing related groups of maneuvers, the tailing pilot is pointing the nose of his own plane in one direction. Logically, he must perform a maneuver that starts with this initial pointing, but he can choose any maneuver that begins in that direction.

The four groups of maneuvers are:

UP	DOWN	LEFT	RIGHT
Climb	Dive	Bank Left	Bank Right
Stall	Falling Leaf	Turn Left	Turn Right
Loop	Split-S	Circle Left	Circle Right
Immelmann	Tail Spin	Wingover	Wingover
Straight	Straight	Left	Right
		Barrell Roll Left	Barrell Roll Right

The pilot being tailed picks a maneuver as in the normal tailing rules. For right and left maneuvers, the lead pilot announces right or left as soon as he turns his maneuver card face up.

The tailing pilot, instead of choosing several cards, picks one to three of the directional groups according to the following table:

Attack Range	**Groups**
to 100 feet	One group
150-200 feet	Two groups (cannot be opposite directions)
250-300 feet	Three groups

If the maneuver performed by the lead pilot is in one of the groups chosen by the tailing pilot, then the lead pilot is followed. Otherwise, the tailing pilot has been shaken off.

If there are more than two planes in a tailing chain, the same procedure is followed. However, since following players choose groups of maneuvers, if they are being tailed they must announce which one of the maneuvers they will perform from the groups they have chosen.

If pilot experience allows additional tailing cards for the tailing pilot, yellow cards are taken as the extra choices. Directional restrictions for these cards, if any, do not apply.

Note: This system allows more chances to be reversed, so pilots should be careful!

Critical Hits

In the Basic Game, damage to a section of a plane has no effect until it reaches the point where the plane is shot down. Using this rule makes it possible for damage to affect a plane before it reaches the point where the section is destroyed.

The chance that a section will be critically damaged depends on the total number of hits that section has taken. Each turn a section takes one or more new hits, the player must look at the table below to find the probability of a critical hit in the section. One check is made for each section that took one or more hits; no checks are made for sections that were not damaged in the current turn. The player determines the chance of a critical hit for each section that was damaged and rolls separately for each section. Note that engines have a greater chance of being critically damaged than fuselage or wing sections.

Hits Taken in FF, T, LW, RW	Total Hits taken in Engine	Chance of Critical Hit
1	-	-
2	1	5%
3	-	10%
4	2	15%
5	-	20%
6	-	25%
7	3	30%
8	-	35%
9	-	40%
10	-	45%
11	4	50%
12	-	55%
13	-	60%
-	5	75%
-	6*	90%

*Applies to engines with 7 hit factors only.

If no critical hit results no more checks need to be made for that section until it is hit again, and then the chance of a critical hit will increase. If a critical hit does occur, the player should roll two dice and refer to the table below that corresponds to the damaged section of the plane. The result should be recorded on the mission log.

ENGINE

2 Engine explodes — aircraft shot down and destroyed.
3 *Engine on fire — engine running, but on fire.
4 Fuel line hit — engine quits, must glide to landing.
5 *Intake manifold hit — cut top and turn speeds by 20 mph and climb to 100 feet maximum.
6 *Carburetor hit — no effect.
7 *Carburetor hit — cut top and turn speeds by 10 mph and climb by 50 feet.
8 Intake manifold hit — cut top and turn speeds by 10 mph and climb by 50 feet.
9 *Mechanism hit — cut top speed to turn speed and climb by 50 feet.
10 *Oil leak — engine may seize if serious; roll one die: on 1, 2, 3 or 4 engine quits after that number of turns, on 5 or 6 no effect.
11 Propeller or prop shaft hit — engine unbalanced, must cut to low throttle and glide to landing.
12 Compression loss — cut top speed to basic turn speed (the start of game turn speed unadjusted by critical hits) and climb by 100 feet. At 10,000 feet or above, reduce top speed and turn speed by another 10 mph and climb by 50 feet more.

* An asterisk means the aircraft is trailing smoke. Smoke is visible to all players (use a strip of cotton to mark smoking planes). For the rest of the game the pilot must add 100 feet to the range of all his shots, both to hit and for effect. Observers are not affected.

If an engine's hit capacity is reduced to zero, if may catch fire or explode. Roll one die for the hit reducing it to zero and for each additional engine hit, taking the worst (lowest) result:

1 = engine explodes
2 or 3 = engines catches fire
4, 5 or 6 = engine quits

If the engine explodes, the plane is demolished and the pilot has only a 5% chance to survive (10% if below 2,000 feet). If the engine is burning the pilot must sideslip using a falling leaf maneuver in an attempt to put it out. At least four sideslips must be done each turn to fan the flames away from the cockpit. The pilot rolls one die each turn:

1 = fire extinguished
2-5 = no effect
6 = engine explodes

If the fire has not been put out within three turns, it will spread out of control on the fourth. If a straight dive without sideslips is attempted, the engine will explode on a roll of five or six, and the fire automatically spreads out of control on the next turn. Once a fire is out of control the pilot must land immediately (on the turn the fire spreads out of control) or jump from the burning plane. Whenever a plane is burning, getting it to the ground is the most important object. Straight dives should never be attempted unless landing is an immediate possibility.

FORWARD FUSELAGE

2 Controls destroyed — shot down out of control.
3 Ammo belt cut — one ammo belt is cut, reducing ammunition supply for one gun; roll one die for number of remaining bursts or double one die for number of remaining ammo points.
4 Landing gear damaged — subtract 20% from landing chance.
5 Aileron cables hit — cut turn speed by 30 mph, no banks, sideslips or fancy maneuvers possible.
6 Guns hit — roll die to see if guns are destroyed: 1-3 = one gun ruined, 4-6 = both guns ruined.
7 Fuel tank hit — danger of fire or explosion, roll one die: 1 = engine explodes, 2 or 3 = engine running but on fire, 4-6 = tank leaking fuel. If the engine did not explode, roll one die; the engine will quit after that many turns, due to fuel leakage. There is a 30% chance the engine will explode if the guns are fired while fuel is leaking.
8 Rudder cables hit— cut turn speed by 20 mph, no banks, sideslips or fancy maneuvers possible.
9 Elevator cables hit — no fancy maneuvers possible and no climbing possible. Dive limited to no more than 1,000 feet per turn.
10 Fuel tank hit — same as #7.
11 Tire hit and deflated — subtract 10% from landing chance.
12 Controls jammed — must fly straight with no gain or loss of altitude possible until unjammed. Roll one die at the end of every turn: 1, 2 or 3 means problems corrected.

TAIL

2 Tail skid damaged — subtract 10% from landing chance.
3 Controls jammed — same as Forward Fuselage #12.
4 Controls jammed — same as Forward Fuselage #12 except plane must circle; roll die: 1-3 = left, 4-6 = right.
5 Stabilizer damaged — cut dive by 100 feet.
6 Rudder hit — same as Forward Fuselage #8.
7 Elevator hit — same as Forward Fuselage #9.
8 Stabilizer damaged — cut dive by 200 feet.
9 Tail structure damaged — cut climb by 100 feet, dive by 300 feet, turn speed by 10 mph, add one more hit to damage taken.
10 Rudder hit — cut turn speed by 10 mph.
11 Elevator hit — cut climb by 100 feet, dive by 200 feet.
12 Tail skid structure damaged — same as #2.

WING (Left or Right)

2 Aileron cables hit — same as Forward Fuselage #5.
3 Aileron jammed — must bank (roll die: 1-3 = left, 4-6 = right) with no gain or loss of altitude possible for at least one turn, until unjammed. Roll die at the end of every turn, and a 1, 2 or 3 indicates the problem is corrected.
4 Aileron hit — cut turn speed by 10 mph.
5 Strut hit — cut climb by 100 feet, dive by 600 feet, turn speed by 10 mph, no fancy maneuvers possible, add two more hits to the damage taken.
6 Wing structure damaged — dive cut by 100 feet.
7 Aileron hit — cut turn speed by 10 mph, no opposite turns or banks permitted (if right wing, no left turns or banks).
8 Aileron hit — no opposite turns or banks permitted.
9 Wing structure damaged — cut dive by 200 feet.
10 Strut hit — cut climb by 50 feet, dive by 400 feet, no fancy maneuvers possible, add one more hit to damage taken.
11 Wing spar hit — dive cut by 100 feet, add two more hits to damage taken.
12 Aileron hit — cut turn speed by 10 mph.

CENTER WING

Critical hits are not possible in the center wing, but there is a chance that hits in the center wing can damage wing-mounted guns. Roll for CW critical hits using the normal procedure. If a critical hit results, roll two dice; if a five is rolled, the ammo drum is hit and destroyed and must be replaced; if a six or seven is rolled, the wing gun is ruined. All other rolls have no effect.

REAR FUSELAGE

Critical hits are not possible in the rear fuselage, but there is a chance that hits in the rear fuselage can damage rear guns. Roll for RF critical hits using the normal procedure. If a critical hit results, roll two dice: if a five is rolled, the ammo drum is hit and destroyed and must be replaced (only one drum must be replaced on a twin-gun mount); if a six or seven is rolled, the gun is hit and ruined (there is a 50% chance only one gun of a twin-gun mount will be destroyed). All other rolls have no effect.

A section can suffer more than one critical hit. Performance losses are cumulative. Conflicting critical hits (such as *no right turns* and *must bank right)* cause planes to fall out of control.

When critical hits cause an extreme loss of performance, certain events may be called for:

Dive — If the dive rate is cut to zero, the aircraft is shot down out of control.

Climb — If the climb rate is cut to a negative figure, the aircraft must lose at least that much altitude each turn in the course of normal movement. No climb, loop or Immelmann maneuvers can be performed if the climb rate is zero or a negative figure.

Turn Speed — Cuts in turn speed sometimes reduce the maneuvering speed to less than 60 mph. If this happens, the aircraft cannot maintain sufficient forward speed for turning and will fall out of control if a turn is made until it reaches an altitude where the turn speed can be brought back up to the 60 mph minimum. Once the turn speed is back up to 60 mph or more, the aircraft is under full control and can resume normal flight. If the aircraft cannot regain its minimum turn speed even at low altitude, it will fall to the ground and crash. If the pilot is able, he can shut off the engine and try to glide in for a landing. An aircraft unable to turn due to either loss of turn speed or special damage may do so in order to return home, assuming it has power and has escaped from combat. In such cases, the plane has a 20% chance of going out of control and crashing (with a 10% chance for the pilot to survive) before reaching its field. If the field is reached, landing chances are determined using landing rules (see Landings & Takeoffs).

If an aircraft's turn speed at the lowest altitude level is reduced to zero or less, it is shot down out of control.

Top Speed — If the top speed is cut to less than the 60 mph minimum, the plane must glide.

As in the Basic Game, aircraft that are shot down by hits in areas other than the engine will fall out of control and crash.

Ground Attack and Ground Fire

Aircraft can attack ground targets by bombing or strafing them with machine gun fire. When making ground attacks, planes can encounter enemy fire from ground-based machine guns, light anti-aircraft guns (flak) or infantry small arms.

All types of planes in the game can strafe ground targets, but only a few can be equipped with small bombs for tactical bombing. Some types listed as bombers were used in strategic bombing, dropping bombs on general targets from high altitude.

The fighter and bomber aircraft in the game are divided into three categories, depending on how they deliver their bomb load: high-level bombers, tactical bombers that can carry several bombs and tactical bombers that can carry only a single light bombload.

High-Level Bombing

Types — D.H. 4, D.H. 9/9A, Sopwith 1½ Strutter, Breguet 14, Dorand AR.2, S.P.A.D. XI.

These aircraft capable of high-level strategic bombing carry a relatively heavy bombload that is dropped in a single turn. Strategic bombers often dropped their bombs from 10,000 feet or higher. High-level bombing in WWI was wildly inaccurate due to the lack of effective bombsights, so each aircraft dropping bombs has only a 15% chance to hit its target. Bombs usually scatter over a large area. Misses have no effect.

While carrying their bombload, these aircraft have the following reductions in performance: top speed -20 mph, turn speed -10 mph (but not less than 60 mph), climb -50 feet, ceiling -1,000 feet.

Tactical Bombing

Multiple drop — Salmson 2A.2, Sopwith 1½ Strutter, Bristol F2B, Armstrong-Whitworth F.K. 8, R.E. 8, Sopwith Camel, Sopwith Dolphin, Sopwith Snipe, D.H. 5, L.V.G. CV/CVI, Sopwith Pup, SE 5/5a.

While carrying bombs, these aircraft have their top and turn speeds reduced by 10 mph and their climb rate reduced by 100 feet.

Single drop — S.A.M.L. 2, Halberstadt CL II and CL IV, Hannover CL IIIa, A.E.G. CIV.

The performance of single drop tactical bombers is not reduced when they carry bombs.

Tactical bombers that can make multiple drops usually carry four light bombs on racks under the lower wing. They can be released simultaneously or one at a time, at the pilot's option. The single-drop bombers carry a light bombload that must be dropped in one turn.

When carrying bombs, planes on tactical bombing missions are restricted to altitudes below 5,000 feet.

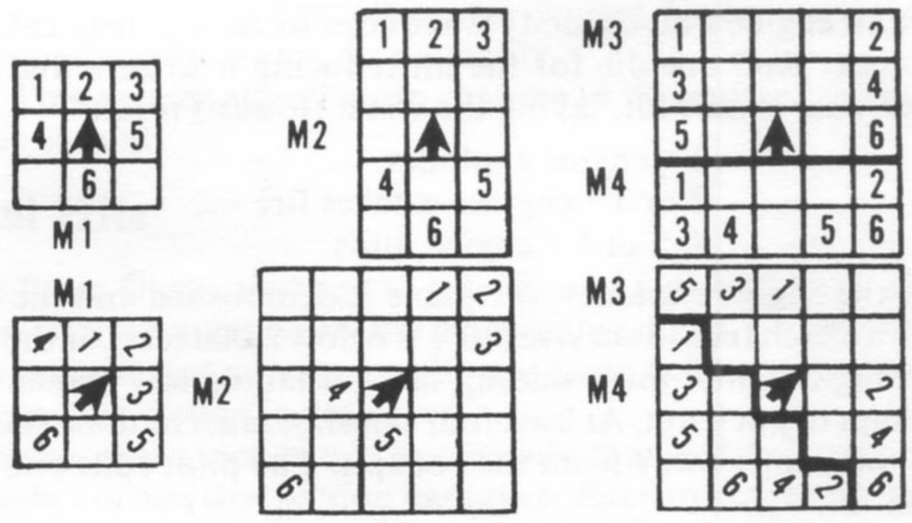
Tactical bombers must be at 400 feet or lower when they drop their bombs. The bombing aircraft must move directly over the target, and the target must be in one of the last six squares the plane moved over that turn (not including squares the plane moved over while performing a maneuver). If the target is moving at 20 mph or faster such as a truck or train, the bombing plane must be moving in the same direction.

The bombing pilot rolls one die on the table below, subtracting one from the roll if the target is moving 20 mph or faster or if the plane turned one square before passing over the target.

Roll	Bomb Range 50′-100′	150′-250′	300′-400′
1	M2	M3	M4
2	M1	M2	M3
3	Hit	M1	M2
4	Hit	Hit	M1
5	Hit	Hit	Hit
6	Hit	Hit	Hit

Hit - The bomb hit its target and the target was destroyed.

M# - The bomb missed its target. Roll one die on the appropriate miss diagram below to see where the bomb fell. The arrows on the



diagrams indicate the target squares and the direction of the bombing plane.

Misses do not damage the target, but do destroy any objects in the square where the bombs fell.

Each pilot must keep track of his own bombload, especially if bombs are being released individually from planes with a multiple drop capability. Bombs can be jettisoned (dumped without a target) by the pilot at any time from any altitude to increase the plane's performance. The pilot must announce this action just as he would if he were bombing a target. Planes landing with a bombload must take a 15% penalty on their landing chance. If the plane crashes, there is a 20% chance the bombs will explode, cutting the pilot's survival chances in half.

Strafing

Strafing is done from an altitude of either 50 or 100 feet, and a level (not nose down) attitude. Any military unit on the ground is fair game for strafing, but gun positions (machine guns and anti-aircraft or AA units) are the most common targets.

The range of a strafing attack is counted normally, but the aircraft's maximum range is increased to 650 feet. The chances of hitting the target at various ranges are:

Range	Roll to Hit
150′-250′	1-5
300′-350′	1-4
400′-450′	1-3
500′-550′	1-2
600′-650′	1

Check the type of burst against the corresponding range in the normal manner for effect. There are five ranges, just as with other shots.

A ground gun can be put out of action by strafing in three ways: by disabling the gun itself, by killing or wounding the gun's crew or by forcing the crew to abandon the gun.

The table below lists results of strafing attacks on ground gun positions depending on the number of hits scored in the attack. The defending player rolls one die, subtracting one if the gun is dug in for better protection.

Roll	Hits 1	2	3	4	5	6	7	8
1	-	-	-	0-1	0-1	1-1	1-2	1-3*
2	-	-	0-1	0-1	1-1	1-2	1-3*	2-2
3	-	0-1	0-1	1-1	1-2	1-3*	2-2	2-3*
4	0-1	0-1	1-1	1-2	1-3*	2-2	2-3*	3-3
5	0-1	1-1	1-2	1-3*	2-2	2-3*	3-3	3-**
6	1-1	1-2	1-3*	2-2	2-3*	3-3	3-**	4-**

The first number in each result is the number of crew casualties. The second number is the number of turns that the gun may not fire. An asterisk means the gun is destroyed if it is a machine gun. A double asterisk means the gun is destroyed regardless of its type.

A machine gun has a crew of three and a light AA gun has a crew of six. It takes at least one man to fire a machine gun, and at least two to fire a light AA gun. The number of hits scored by a ground gun is reduced by one if its crew is short two persons and is reduced by two if its crew is short four persons. A ground gun that damages its target always causes at least one hit, despite crew reductions.

If a gun is destroyed, surviving crew members can run to another gun position at the rate of one square per turn. Players will have to use a coin or other small marker to keep track of the crew's position.

The attacking pilot should not know the result of a strafing run. The defender rolls the result secretly.

Ground Fire

Ground-based machine guns and anti-aircraft guns are very dangerous weapons, and attacking planes will want to either destroy the guns quickly or escape from the area before they can be seriously damaged.

On the turn airplanes attack a ground gun, it may not fire unless the defending player rolls a one on one die. On any other result, the crew seeks cover from the attacking planes. If a machine gun crew stays with the gun and attacks the plane, their defensive fire at the attacking plane is a head-on shot. Ground guns that are dug in or otherwise specially protected will return fire if a one or two is rolled.

When a ground machine gun is shooting at a plane that is not attacking it, the position and facing of the target plane in relation to the gun determines the angle of attack (see the attack angle diagram in the Basic Game).

Machine guns on the ground have a maximum range of 1,000 feet, divided as shown on the table below. Light AA guns have a maximum range of 2,500 feet, also divided as shown below, but they cannot shoot at targets flying at 100 feet or lower.

Ground MG and AA Range/ Firepower Effectiveness

Machine Guns			Anti-Aircraft		
Range	Roll to Damage	Hit table Column	Range	Roll to Damage	Hit table Column
50-150′	1-5	J	150-250′	1-5	K
200-250′	1-4	I	300-450′	1-4	J
300-350′	1-3	H	500-700′	1-3	J
400-450′	1-2	G	750-1000′	1-2	I
500-1000′	1	F	1050-2500′	1	H

Machine gun hits are distributed normally, and there is no adjustment for deflection shooting.

Anti-aircraft shells burst around the target plane. The firing player must roll for each hit to determine where the flak bursts relative to the target:

1 = head-on, 2 = tail, 3 = top, 4 = bottom, 5 or 6 = side

These are the attack angles used when the attacker rolls to distribute hits on the target plane.

The German flaming onion is a rapid-fire light flak gun using tracer ammunition which leaves a trail of smoke and fire in the air, giving it its unusual name among Allied pilots. Flaming onions need to roll a one to hit at any range. They always make bottom attacks and roll for hits on column F. Each hit causes two points of damage in the area it strikes.

Machine guns and AA guns will not fire at an enemy plane if a friendly plane is within 200 or 400 feet of the target, respectively. Hill contours which intervene may block a target, but other ground obstacles will not prevent ground guns from firing.

Infantry Fire

Enemy infantry can shoot at planes flying overhead, but small arms fire from the ground is relatively ineffective. Planes flying at 1,000 feet or lower can be shot at by infantry. The number of attacks made against each plane depends on the concentration of troops in the area. Roll one die to determine the concentration:

Roll	Concentration	No. of Attacks
1	Sparse	1
2	Light	1
3-4	Medium	2
5-6	Heavy	3

In areas near the front lines, add two to the die roll; near military installations (ammo dumps, train depots, artillery batteries, etc.), add one to the roll.

Infantry does not occupy a specific square on the board, but is spread over the entire map; if there is a medium concentration of ground troops, there is a medium concentration in each square. This means that anytime a plane drops to 1,000 feet or less it is within range of infantry attacks, no matter where it is on the map. Every enemy plane within range will be attacked one to three times each turn, depending on the troop concentration. Each attack has a 5% chance of scoring one hit in a bottom attack. Since ground troops never lead fast-moving targets enough, any friendly planes flying at or below 1,000 feet that are 200 feet or less behind, above or below a plane that is the target of small arms fire have the same chance of being hit.

Observation Balloons

Observation balloons were not an uncommon sight behind both lines in World War I. Moored to the ground by a cable and filled with light but volatile hydrogen gas, balloons floated leisurely while an observer in a suspended basket scouted enemy positions or directed artillery fire. Since balloons were important both offensively and defensively, they often were attacked by enemy planes.

Balloons are found at varying altitudes (sometimes higher than 3,000 feet), but the usual altitude is 300 to 800 feet. Players may set a balloon altitude by rolling a die:

1	300 feet
2	400 feet
3	500 feet
4	600 feet
5	700 feet
6	800 feet

Balloons take up two squares and cannot be placed diagonally. Until they are shot down, they are considered obstacles to flight at their altitude. Flying under a balloon is not allowed.

Balloon Defenses

Balloons are defended by light AA guns and ground-based machine guns. These guns are positioned close to the balloon's cable, forming a ring of defensive fire to protect the balloon from enemy aircraft. German balloons often are protected by a battery of flaming onions. For more details on ground fire, see Ground Attack and Ground Fire.

The defending side rolls one die (concealed from the attackers) to determine the balloon's defenses:

1	2 AA, 5 MG	4	3 AA, 4 MG
2	2 AA, 6 MG	5	4 AA, 4 MG
3	3 AA, 5 MG	6	4 AA, 5 MG

German defenders get an extra roll for flaming onions:

1 or 2	two batteries of onions
3, 4, or 5	one battery of onions
6	none

Defensive guns can be placed anywhere around the balloon. The gun counters can be placed face down so that the attacker does not know how well the balloon is defended until the defending batteries open fire. If there are fewer than 10 gun counters defending the balloon, the defending player can mix in face-down airplane counters so that there are 10 face-down counters surrounding the balloon. These airplane counters act as dummies, concealing the arrangement of the ground defenses from the attacker. When the ground batteries open fire, the dummy counters are removed from the board.

If ground guns have not yet started to fire before the first attack, all attacking pilots may roll a die to see if they surprise the balloon's defenders. If all attacking planes roll ones, the attack is a surprise and

only machine gun defenses can fire that turn. If the attack is not a surprise, the ground crew can start pulling the balloon down at the rate of 150 feet per turn, beginning at the end of the turn when the guns start firing. Once a balloon is on the ground, it may not be attacked.

In the last two months of the war (September/October 1918), the Germans introduced special Krupps-Daimler winch trucks that could wind down a balloon at up to 300 feet per turn. During these months German balloons have a 50% chance of being equipped with this special equipment.

AA and onions start to fire as soon as the attackers come into range. Defenders roll for flak and onion hits and damage immediately prior to the attacking planes, shots on the balloon. Pilots must make a special check immediately for critical hits, pilot wounds or any other damage that would make them lose their shot. If shot down by flak or onions, the attacker loses his shot at the balloon. If nothing prevents a shot, the pilot rolls his attack before any machine guns or enemy pilots shoot. Ground machine gun fire is rolled last, followed by the normal checks for damage.

Destroying Balloons

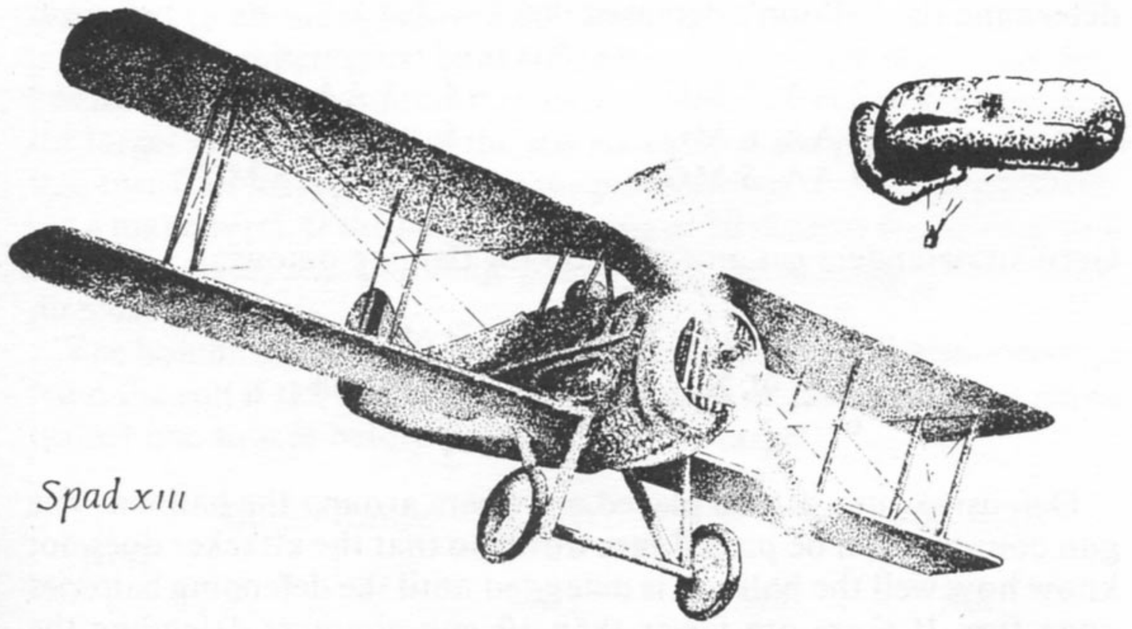
Shooting a balloon down is a tricky business. Sometimes one will go down with only a few hits, but sometimes it will stay aloft after a devastating hail of fire. The table below shows the chance for shooting down a balloon:

Total hits	Roll to down balloon
1, 2	1
3, 4	1, 2
5, 6	1, 2, 3
7, 8	1, 2, 3, 4
9+	1, 2, 3, 4, 5

A balloon always stays up on a roll of six, no matter how many hits it has taken.

Once a balloon is shot down, players must determine whether it explodes or merely deflates. The more gas pressure there is in a balloon when it goes down, the more likely it is to explode. The table below shows the chances for a balloon to explode, depending on the number of hits it has taken in previous turns.

Hits taken prior to this attack	Roll for downed balloon to explode
0, 1, 2	2, 3, 4, 5, 6
3, 4	3, 4, 5, 6
5, 6	4, 5, 6
7, 8	5, 6
9+	6



Spad XIII

An exploding balloon sends flaming hydrogen gas 200 feet straight up. Any plane that is directly above the balloon and within 200 feet of the balloon's altitude when it explodes, and any plane that flies through those squares on the next turn, regardless of its climb rate, will be consumed by flames and destroyed on a roll of 1-3 on one die. Planes adjacent to the balloon are not in danger, but they cannot fly through the flame-filled squares without risking destruction. Banking alongside or past the corner of a flame square is safe. Performing a loop or Immelmann turn from an adjacent square while pointed at the balloon risks a 15% chance (rather than the 1-3 roll) of being destroyed in the explosion (5% for ace or experienced pilots).

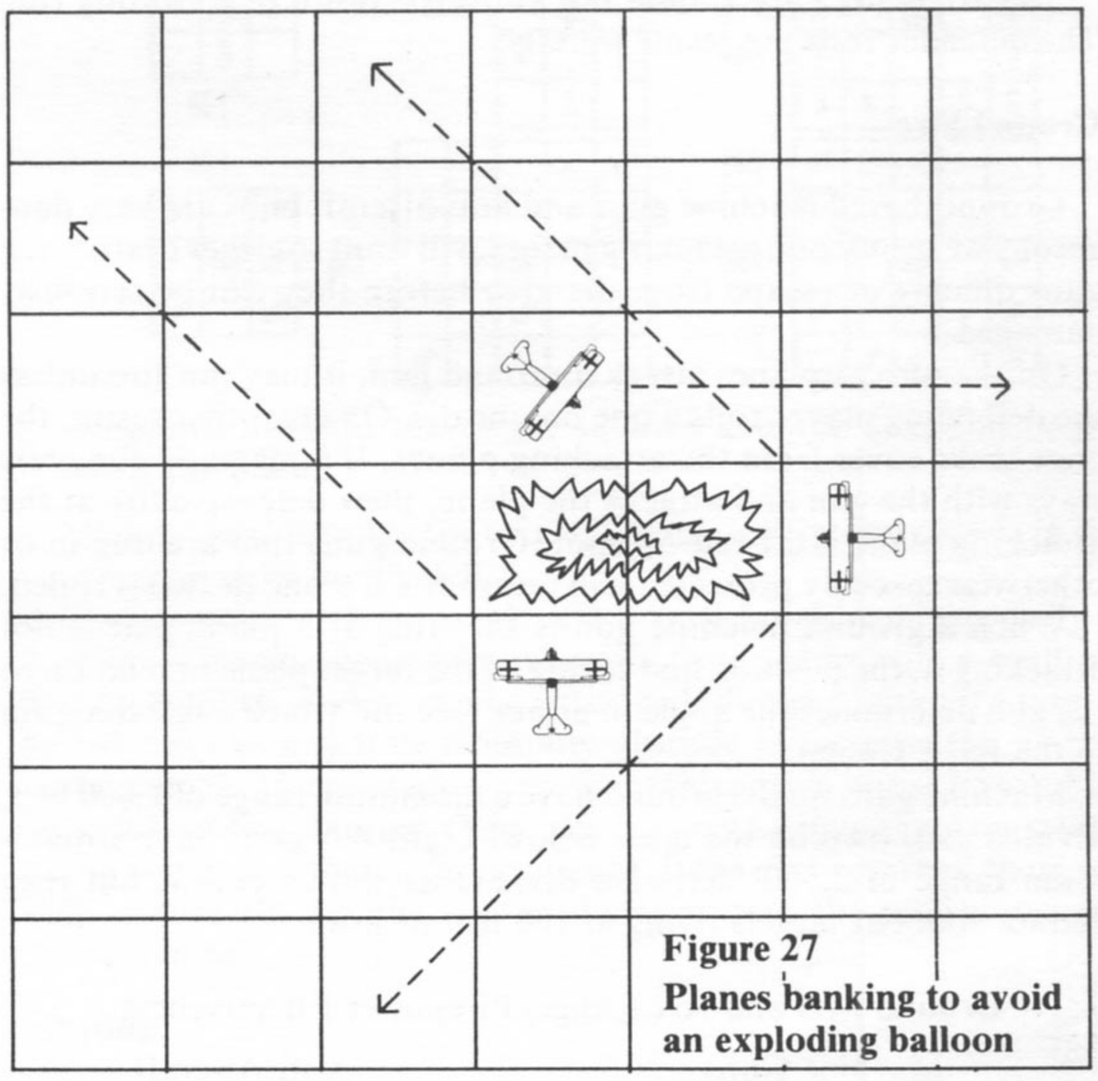


Figure 27
Planes banking to avoid an exploding balloon

Rockets

Although most balloons were attacked by aircraft firing machine guns, French and British fliers used Le Prieur wing rockets mounted on Nieuport 17s or S.P.A.D. VIIs. These rockets were mounted on the outside wing struts and fired simultaneously. Le Prieur rockets were wildly inaccurate at anything other than close range, but if a rocket hit and detonated properly the destruction of the balloon was assured. The attacker must close to 150 feet or less when firing these rockets. A roll of one or two means the balloon is destroyed by explosion. Any balloon attack mission flying these planes has a 50% chance of carrying Le Prieur rockets. One roll is made for the entire flight; pilots do not roll individually.

Special Characteristics

This section describes non-standard or unusual features of planes and equipment that can be used to increase the variety and realism of **DAWN PATROL** games.

Allied Two-seaters. The most common rear-seat gun for Allied planes is the Lewis, used in either single or double mounts (listed on the individual specification cards). In 1917 all Allied two-seaters had the single mount.

The twin mount came into increased use in 1918. If the combat is in 1918, one die is rolled for each aircraft (hidden from the opposing players) and cross-indexed with the month of the game: Jan-Apr, 1-3 for twin mount; May-Jul, 1-4 for twin mount; Aug-end, 1-5 for twin mount.

Two-seaters, all types. In side, top and bottom attacks on two-seaters, hits on the RF have a chance of hitting the observer. Since the RF cannot be hit in a tail attack, hits on the T also have a chance of hitting the observer. If the Wounded Pilot rule is being used, the observer can roll to determine the extent of his injury.

Sopwith 1½ Strutter. The Sopwith 1½ Strutter was a multi-purpose aircraft that could be used either as a single or two-seater. The Strutter can be employed in varying capacities in different games, at the players' option.

De Havilland 4. Both D.H. 4 models were equipped with a crude dual control arrangement that allowed the observer to take control of the

plane in an emergency. It takes one turn for the observer to engage or disengage the system, and he may not perform any other task while doing so. An aircraft that is being flown by an observer may not attack.

Because of inexperience, the observer will have difficulty doing anything other than simple flying. Therefore, the following penalties are in effect while the observer is flying: no fancy or reversal maneuvers, turn speed cut by 10 mph (but not less than 60 mph), climb cut to 100 foot maximum, and -20% if landing is attempted.

The pilot and observer of the D.H. 4 are separated by a large fuel tank. No communication other than hand signals and nods is permitted between them while the engine is running. A crude speaking tube was provided, but it was virtually useless.

Armstrong-Whitworth F.K. 8 and S.P.A.D. XI. These aircraft were equipped with a crude sort of dual control which functioned like that of the D.H. 4. However, the observer may take over the controls without spending a turn hooking up the system.

Salmson 2A2. The Salmson, like the D.H.4, is designed with the pilot and observer separated. Communication between them is limited to nods and hand signals.

S.A.M.L. 2. This Italian two-seater carried a forward-firing wing-mounted gun that was fired by the pilot. Since the pilot sat directly under the wing, however, the gun was completely out of his reach. Any reloading or unjamming must be handled by the observer, who is in a better position to reach the gun.

Sopwith Camel, Sopwith Snipe and Fokker Dr I. Because of the extreme torque of its rotary engine, the Sopwith Camel had a tendency to turn sharply to the right. In the hands of a skilled pilot it was undoubtedly one of the most maneuverable aircraft of the Great War. To incorporate this, allow the Camel to make 90 degree turns to the right in normal movement or after a maneuver.

Even though the manufacturers tried to offset their torque effects, the Sopwith Snipe and Fokker Dr I also were extremely maneuverable. They are also allowed to make rotary right turns of 90 degrees.

Lewis Guns. When mounted on the top wing (as on the SE 5/5a and Nieuport 17), Lewis guns are equipped with a special mount. The gun normally fires forward in conjunction with the Vickers, but also can be swung so it points up, allowing a defense against top attacks. If a plane with a wing gun is attacked from the top, the pilot has the option to use it to fire back at the attacker. (See also the Reloading subsection o f Ammunition Expenditure).

Nieuport 17. The armament of the Nieuport varied. Each pilot should roll at the start of the game to determine what guns his plane is carrying:

1 or 2 = one top-wing Lewis
3 or 4 = one deck-mounted Vickers
5 or 6 = both

Add one to the roll if the date of combat is after August 1917.

Sopwith Dolphin. Some Dolphins mounted Lewis guns in addition to their two fuselage-mounted Vickers guns. If a Dolphin pilot rolls a one, two or three at the start of the game, his aircraft mounts one additional Lewis. If so, another roll can be made: if another one is rolled on one die, two Lewis guns are carried.

When firing, the pilot can use either the twin Vickers or the Lewis gun(s), but he can never fire both in a single turn.

Albatros DV/Va. These aircraft were equipped with a device to lock the controls, allowing the pilot to use both hands to work on a gun jam. Albatros pilots can add 5% to their clearing chances, but they must fly in a straight line without diving or climbing for the complete turn. Using this device will never prevent an out of control situation, so it cannot be used as a form of "automatic pilot."

Fokker D VII. Besides being an all-around excellent aircraft, the Fokker D VII had the unique ability to nose up and "hang on its prop" for brief moments. This gave its pilot an advantage when shooting at planes from below. To reflect this, pilots of the Fokker D VII get a one-column shift to the right on the Hit Table on all side attacks when the Fokker is at a lower altitude than the target plane, and on all nose-up bottom attacks except those at close range (50 to 100 feet).

Phonix D I and O. Aviatik (Berg) D I. These two Austro-Hungarian fighters were hampered by a serious design flaw: their twin Schwarzlose machine guns were fully enclosed and out of the pilot's reach. If a gun jammed during combat, it could not be cleared!

On later production Berg fighters, the guns were moved back so the pilot could unjam them. On Berg D Is appearing in games from June 1918 to the end of the war, there is a 50% chance each plane may have this improvement.

German Two-seaters. Four types of German two-seaters (the Roland C II, Hannover CL IIIa and Halberstadt CL II and CL IV) have elevated observer's guns which are high enough to fire over the top of the upper wing. Observers on these aircraft need to roll a one or two (rather than just a one) to return fire on targets that are ahead of the plane, at the same altitude and off to the side.

These same observers can bring their gun to bear directly ahead to coincide with the pilot's field of fire on targets at the same altitude. The observer's gun is unsynchronized, however, so there is some risk when firing through the propeller. A die must be rolled for each shot; a roll of one means the propeller has been hit (treat as Engine Critical Hit #11).

Getting Back

Sooner or later, every player faces the problem of bringing back a crippled plane. No matter what the problem is (oil leak, fuel line hit, pilot wound), getting back becomes crucial and suddenly the location of the battle becomes important.

The Distance Home

A die roll at the start of the game determines the general location of combat (over the front lines or on either side), but an exact fix is needed. In these cases, dice are rolled to determine the width of the front lines in that particular sector and for the distance to the lines if the battle is occurring over one side or the other.

To find the width of the front, which includes No Man's Land and the full width of the trench systems on both sides, one die is rolled. The resulting number is the number of dice thrown and their total is the number of turns it takes to cross the front. Each turn converts to a base of nine squares. Example: The first roll is a four, so four dice are rolled. Their total is 13, so the front is 13 turns wide, or 117 squares (13 x 9 = 117). The width of the front can vary greatly, depending on the sector and the extensiveness of the trench systems on both sides of the line.

If the battle is behind the lines on one side, the same procedure is used to determine how far it is to the lines. One die is thrown first to determine how many dice should be rolled, then that many dice are rolled and their total is the number of turns back to the lines. The number of turns can be multiplied by nine to give the exact number of squares to the front — if a plane must cross the lines, however, the width of the front must be added.

A pilot can see how far he must fly to get back to his side. The probability of getting back is improved at higher altitudes, because a plane can move one square forward for each 100 feet of altitude it drops (see Gliding). A plane at 14,000 feet could glide 140 squares. Powered flight will increase this number.

Two things can prevent or hinder getting back — a strong headwind or falling out of control. The effect of wind is easily determined; if it is head-on, it reduces the distance covered each turn. A tailwind will increase the distance covered, and a 45 degree head or tailwind will have half effect. Crosswinds can be disregarded. Falling out of control is more serious because it interrupts forward progress and can send the plane into a spin.

If a battle occurs over the front lines, a die can be rolled to determine which side is closer: 1 or 2 nearer to Allied side; 3 or 4 over No Man's Land; 5 or 6 nearer to German side. This can represent a proportional distance of the total width of the front lines (see Downed Pilots).

Planes often will be critically damaged at medium or high altitude or forced to land on unmapped terrain. The simplified landing rules which follow can be used when maps have not been drawn or when players do not want the added complexity of the full landing rule.

Roads

A pilot can try to find a road to land on if he is conscious and below 5,000 feet and is not landing between the front lines. The pilot finds a road if the player rolls a one or two on one die. The player gets to roll the die three times if the plane's engine is running and the pilot is not critically wounded. The player can roll twice if the plane is gliding and the pilot is not critically wounded. The player can roll only once if the pilot is critically wounded. If no ones or twos are rolled, there are no roads in the area. There are never roads in the front or between the lines.

The player must announce whether he will try to land on the road before rolling to determine the road's condition. The condition depends on the month when the game is taking place:

October-April: 1 or 2 = bad condition, 3-6 = good condition
May-September: 1 = bad condition, 2-6 = good condition.

The pilot gets a 10% bonus on his landing chance if the road is in good condition. If the road is in bad condition there is a penalty to the landing chance, determined by rolling one die:

1 or 2 = -10%, 3 or 4 = -15%, 5 or 6 = -25%

This penalty is the only modifier for landing on a bad road; the bonus that would be received for landing on a good road is lost.

See the table under Wind, below, to determine the road's angle to the wind.

Terrain

If the terrain is not mapped out, players can roll one die on the table below to determine the roughness of the ground where the pilot must land.

1 or 2	= flat ground
3	= uneven ground
4 or 5	= rough ground
6	= rocky ground

Add two to this roll if the plane is over the front.

See the table of modifiers listed under Landings for the effects of rough terrain on the pilot's landing chance.

A player searching for good terrain can roll up to three times on the table above if the plane's engine is running and the pilot is not critically wounded. The player can roll twice if the plane is gliding and the pilot is not critically wounded. The player can roll only once if the pilot is critically wounded.

The player must decide immediately after each roll whether he will try to land on the terrain the plane is over or pass it and make another roll. A pilot cannot change his mind and go back to land in an area he has already passed. This means critically wounded pilots must land immediately, and have no choice where they land; the pilot's primary concern is getting down as soon as possible.

Wind

If the aircraft can maneuver so it lands into the wind, no wind roll is necessary. If for some reason the aircraft may not be able to turn into the wind, roll one die to determine its landing angle to the wind:

1 or 2	landing normally into the wind
3 or 4	landing with 45 degree crosswind
5 or 6	landing with 90 degree crosswind

See the table of modifiers listed under Landings for the effects of wind on the pilot's landing

Landing at an Airfield

If a plane is able to return to its home field, it can figure its landing chances normally. Since this is not considered an emergency landing, only 5% should be subtracted for each critical hit, rather than the 10% subtracted if forced down elsewhere.

Planes in distress that have made it back to their own lines can land in a back area, but are not considered to be landing at their home field. Home fields are located a considerable distance behind the lines, and the only airfields near the lines are emergency fields.

If a pilot wants to reach such an airfield, he must roll the number of turns it is from his lines or from his current location if he is already behind his own lines. Use the method described for determining the width of the front, but add three to the first roll for number of dice to be rolled. The pilot must travel that additional distance to the field. Or, having gained his lines and reached a back area, the pilot may decide to land without trying to reach an airfield.

Landings & Takeoffs

Landings

In **DAWN PATROL** game, landing is sometimes desirable or necessary, as is taking off again.

Since wind speed and direction are important in landing and taking off, use of the Advanced Game rule regarding wind is necessary. Wind conditions should be determined before landing or taking off is attempted.

Landing chances are determined on a percentage index. The chance for a successful landing varies according to conditions. For the best chance the aircraft should begin its approach at an altitude of 200 feet and should make the landing at a maximum air-speed of 60 mph which, when combined with the bonus gained in the dive, would be a move of eight squares. Deviation from such an approach is permitted, but will reduce the possibility of a successful landing.

In the landing turn, the aircraft must travel through the final approach squares in the air and the roll-out squares on the ground. No turns can be made in the final approach squares or the roll-out squares. Roll-out always is five squares unless the plane is landing into the wind; this reduces it to four squares.

If an aircraft glides into a landing with its engine off, the minimum dive restriction is lifted and the number of roll-out squares is reduced to four.

The base chance for a successful landing is 75%. The dice are rolled after all other movement for the turn is finished. Penalties and bonuses are applied in the following situations:

+ 10%	Landing on a road that is in good condition
+ 20% or +10%	Landing on home field or other airfield
+ 5%	Aircraft gliding
+ 5%	Experienced pilot (5 or more kills or 12 or more missions)
- 10%	Tailwind
- 10% or - 5%	45 degree crosswind of 20 mph or 10 mph
- 15% or - 10%	90 degree crosswind of 20 mph or 10 mph
- 10%	Landing on uneven ground (rolling or hilly terrain)
- 15%	Landing on rough ground (plowed field, small shell holes, brush, etc.)
- 25%	Landing on rocky ground (big craters, rocks, stumps, etc.)
- 15%	Pilot wounded (light wound or no effect)
- 20%	Pilot critically wounded but conscious
- 10% each	Aircraft landing with critical hit or engine reduced to zero (only -5% each at home field)
- 10%	Under attack by enemy plane or ground fire on turn of landing
- 10%	Excess speed (per 10 mph)
- 5%	Excess altitude (per 100 feet over)
- 5%	Shortage of altitude (per 50 feet under)
- 15%	Carrying bombs or extra passenger

If there are no ground obstacles in the way, a plane's final approach consists of one square before starting the roll-out. If the plane flies over a 50-foot obstacle during its final approach, the obstacle must be 200 feet or more from the first roll-out square. If the plane flies over a 100-foot obstacle, the obstacle must be 300 feet or more from the first roll-out square.

If a landing is successful, no more rolls are needed unless the pilot is wounded. A pilot with a light wound has a 70% chance to survive. A pilot with a critical wound has a 40% chance to survive.

If the landing is unsuccessful, roll one die to determine the extent of damage to the plane:

1	end-over-end roll, plane demolished
2	nosedive crash, plane demolished
3	tail up crash, plane demolished
4	overturn flip crash, plane demolished
5	rough setdown crash, landing gear lost
6	rough wing setdown, wing damaged — roll one die, add two and mark as damage to LW or RW, determined randomly.

The plane can take off again only if the crash result was a six and the wing was not destroyed.

An unsuccessful landing reduces the pilot's chance to survive. The chances are shown on the table below:

pilot previously unhurt	70% chance to survive
pilot has light wound	40% chance to survive
pilot has critical wound	25% chance to survive

Subtract 10% if the crash was an end-over-end roll or a nosedive. Add 10% if the crash was rough setdown or a rough wing setdown.

Taking Off

Takeoff is possible if the aircraft is not seriously damaged. If any section has been reduced to zero or if a critical hit prevents flying, taking off is impossible.

Takeoffs require one full turn of movement, and the aircraft's speed must be between 60 and 80 mph. The aircraft must move five squares in a straight line on the ground (four squares if taking off into the wind). After moving through these squares, the aircraft lifts off and can reach a maximum altitude of 50 feet in the eighth square. If the plane's throttle is set at less than 80 mph, the aircraft will be in flight but at an altitude of zero feet. No turns can be made until the turn after takeoff.

Moving on the ground, either after landing or before taking off, is called taxiing. It is done at 10 or 20 mph (one or two squares). The plane can turn any direction while taxiing, and can even turn without moving into a new square. No airplane can take off without spending at least one turn on the ground taxiing or "warming up". On the turn of takeoff the throttle can immediately be boosted by 60 mph.

The base chance for a successful takeoff is 80%. Penalties and bonuses are applied in the following situations:

+ 20%	Takeoff from home airfield
+ 10%	Takeoff from other airfield
+ 10%	Takeoff from road that is in good condition
+ 5%	Experienced pilot (5 or more kills or 12 or more missions)
- 10%	Takeoff from enemy territory
- 10%	Tailwind or crosswind of any kind
- 10%	Ground obstacle directly ahead and within four squares of takeoff square
- 10%	Takeoff from uneven ground (rolling or hilly terrain)
- 15%	Takeoff from rough ground (plowed field, small shell holes, brush, etc.)
- 25%	Takeoff from rocky ground (big craters, rocks, stumps, etc.)
- 15%	Pilot wounded (may not attempt if critical)
- 10%	Takeoff with critical hit (-10% each)
- 20%	Aircraft under attack on turn of takeoff
- 15%	Carrying bombs or extra passenger

If a takeoff is unsuccessful, treat it the same as an unsuccessful landing, with the same types of crashes possible and the same survival chances.

Downed Pilots

Behind the Lines

If a plane is forced down behind enemy lines, there is a chance the pilot will be forced to surrender before he can take off again. The chance that the pilot will be captured depends on the concentration of troops in the area (troop concentration is explained more fully under Infantry Fire). The player must roll for pilot capture every turn.

Concentration	Chance of Capture
Sparse	5%
Light	15%
Medium	30%
Heavy	50%

In general, unless a pilot who is down behind enemy lines is rescued immediately, he will be captured. In areas with sparse troop concentration a pilot can avoid capture and make it back to his own lines on foot by rolling a one on one die. On any other roll he is captured and becomes a prisoner of war.

At the Front

A pilot who is forced down over the front is in a different situation. He does not have to cross enemy lines to get back to friendly territory, but enemy infantry may try to capture him or shoot him with small arms or light artillery fire.

The distance from the enemy will determine the downed pilot's chances. If the plane comes down in the middle of the front, there is a 50% chance the pilot will be killed or captured. If a plane clears most of the enemy area and is about 70% of the way to safety, then the chance of being killed or captured is only 30%. This sliding scale is to match the area where the pilot was forced down.

If the system outlined above indicates the pilot was killed or captured, roll one die:

1, 2 or 3	pilot captured
4, 5 or 6	pilot killed

Escape

Any captured pilot can try to escape; a roll of one means he escapes and returns safely to his own lines, otherwise the pilot remains a POW for the duration of the war. Incredibly, escapes of pilots in World War I were not unknown and a number were able to fly again.

Rescue

Rescues can be attempted only in areas with sparse, light or medium enemy troop concentrations. The rescuing pilot must be unhurt (or have only NE wounds) and the downed pilot may not be critically wounded.

The rescue attempt will take at least three turns. First, the pilot must land safely. The second turn is spent waiting for the downed pilot to climb aboard (assuming he was close to the plane — a man on the ground can move one square per turn). If the engine is still running, the plane can taxi or attempt to take off on the third turn.

While on the ground the plane and both pilots are subject to attack or capture by enemy infantry. Each pilot has a 10% chance of being shot each turn, and a chance of being forced to surrender based on the troop concentration in the area. The plane is subject to enemy ground fire while landing and taking off. It must take all terrain and damage penalties described under Landings and Takeoffs plus a 15% penalty for the extra passenger. The downed pilot must ride exposed

on the lower wing next to the fuselage, and is subject to pilot hits on that area (side) of the wing. Finally, since planes on the ground, landing or taking off always move first, enemy planes in the area can attack it in the air or strafe it on the ground. The rescued airmen will fall off the wing if he goes unconcscious, suffers a critical wound, or the plane does a loop or fancy maneuver.

Surviving a Crash or Jump

A pilot whose plane crashes other than in an landing or takeoff attempt has a 10% chance of surviving if the plane fell less than 2,000 feet. If the plane was at 2,000 feet or above when it went out of control or was shot down, the pilot has only a 5% chance of surviving. These percentages are used when a plane is shot down out of control, if its engine explodes, if the pilot passes out or if the pilot jumps from his plane without a parachute. The chances may seem optimistic, but they allow for extraordinary bravery, unusual good fortune and other miraculous factors that were occasionally seen in World War I.

All pilots who survive at 5% or 10% in this manner, or who survive a critical wound, must check for possible incapacitation. One die is rolled, and if a 1 or 2 results, the pilot's injuries preclude him from continuing his flying career.

APPENDICES

Appendix A
The Aircraft Mission Log

Players have to keep track of certain information during a **DAWN PATROL** game. The Aircraft Mission Log is designed to make record-keeping easy, but still be flexible enough to suit individual players' styles.

Space is provided at the top of the sheet to list important data about the mission. The Altitude and Shooting Record columns on the left are for listing movement numbers, altitude, speed and details of shooting from turn to turn. On the right side is a grid for recording the performance specifications of the player's aircraft. Cloud and wind conditions can be noted below that, and a third area is included for keeping track of ammunition use.

At the bottom of the page is a section for recording damage to the player's airplane. Players can conceal this information by folding over the bottom of the sheet. Areas where critical hits can occur are underlined.

Players may make photocopies of the sample Mission Log for their own use.

Appendix B
Point System

Although in **DAWN PATROL** games there often is not a clear-cut winner or loser, some players may wish to use a point system to score individual games or tournaments. The following point system can be used for these purposes:

+2	for each hit scored on an enemy aircraft
+30	for shooting down an enemy aircraft
+6	for an "assist" (scoring hits in the area which causes the enemy to be downed, but less than the pilot who gets credit for the kill; if each scores an equal amount of decisive hits, divide +36 among them)
+15	for surviving the combat with aircraft in flying condition (unless down behind enemy lines) or
+10	for surviving the combat
-1	for each hit taken in plane
-2	for each friendly aircraft downed by enemy action (except your own)
-25	for being forced down (plane still in flying condition or crash landed by enemy action) or
-35	for being shot down
-8	for escaping from combat

Note: A force down occurs when a pilot lands and remains on the ground even though his plane is still in flying condition and he is not critically wounded. When this prompted by severe damage or the threat of enemy attacks, it counts as a kill.

Points can also be gained by strafing or bombing military targets in enemy territory. Strafing earns the following points (regardless of the result, as long as hits are scored):

+1	per burst from single gun
+2	per burst from double guns

Bomb hits earn points for destroying the following targets:

AA/onion position	+4	Barge	+8
Artillery gun	+4	Boat	+6
Machine gun position	+2	Locomotive	+6
Aircraft on ground	+8	Railroad car	+2
Large building	+6	Tank	+4
Small building	+4	Truck	+3
Telegraph line	+6	Wagon	+1
Large bridge	+12		
Small bridge	+8		

Bomb misses cause a penalty of -6. Jettisoning bombs causes a penalty of -8 no matter how many bombs are jettisoned.

Players may also decide before a game to give a set number of points to a side if it can complete its mission. Typical missions might be spending three turns photographing enemy troop positions, destroying an ammunition train or locating an enemy artillery battery. When players decide how many points to award for a completed mission, it is more important to balance both sides' chances of winning than to accurately reflect the military importance of the mission.

Appendix C
Missions

The most important role of the airplane in WWI was not fighting, but scouting: spotting enemy movements, locating strong and weak points in enemy defenses, helping coordinate large ground attacks, etc. Fighters were intended to protect friendly scouts and shoot down enemy scouts. The **DAWN PATROL** rules cover almost every aspect of WWI air combat, so players should not feel limited to playing only fighter vs. fighter scenarios.

Typical missions that planes were assigned to are described below:

Fighter Patrol. Groups of fighters or pursuit planes commonly patrolled over the front to intercept enemy scouts and bombers. Allied patrols crossed into German territory regularly, but the German patrols were more defensive and did not cross the front as often. Fighters usually patrolled in groups, but the Germans (von Richthofen in particular) encouraged fighter pilots to fly alone; their targets were lone scouts, and a single plane had a better chance of surprising its prey. Fighters patrolled at all altitudes, and they are the most likely encounter for planes that cross the front.

Escort. Because of their importance, observation and reconnaissance planes were sometimes escorted by fighters. Escorts were not a general rule, but would be sent if enemy attacks were expected.

Reconnaissance Patrol. Reconnaissance patrols were the backbone of the flying forces. Two-seater reconnaissance planes gathered information about the enemy by flying into enemy territory and spotting enemy positions and movements. They often carried cameras to photograph the trench systems and hidden strongpoints.

Most reconnaisance planes flew alone, but groups of two or more, or a few with fighter escorts, were not uncommon.

Players can set up reconnaissance patrols by deciding how far into enemy territory the planes must go and how many turns they must spend taking photographs. An enemy patrol can appear at any time during the mission. An observer cannot take pictures if he is firing a machine gun or if the plane is not flying straight and level.

Observation Patrol. Observation patrols are similar to reconnaissance patrols, but instead of a camera the observer often carried a

one-way wireless to communicate with artillery batteries on the ground. The observer acted as a spotter, telling the artillery where enemy troops were concentrated or where friendly infantry needed support.

Observation missions could be flown at any altitude. Like reconnaissance planes, observation planes usually flew alone, but an escort could be sent along if enemy interference was expected.

Bombing. Bombing missions were flown throughout the latter years of the war, but they did not become common until late in 1918. Strategic bombers flew in large groups at high altitude. Typical targets were factories, shipping yards, train yards and other large installations behind enemy lines. The bomber formations were large enough to protect themselves, so they usually were not escorted by fighters.

Ground Attack. Ground attack planes were used most often to attack small targets near the front. The planes, usually flying in several small groups, could attack supply convoys, columns of soldiers, ammunition trains, artillery batteries, balloons, headquarter areas, etc.

Any number of scenarios can be created by combining these missions. For example, an Allied reconnaissance patrol that is photographing German trenches could be attacked by a German fighter patrol. Or, a flight of German ground attack planes could encounter an Allied observation flight. Such encounters did not always lead to dogfights, but they can be the basis for interesting **DAWN PATROL** games.

Appendix D

Air Unit Organization

Flying units of the various air forces were generally organized in a similar manner. At full strength, these groups usually included 12 to 16 aircraft with an equal number of pilots (plus observers if two-seater aircraft were used). A full complement of support personnel and equipment rounded out the group. Since flying units were often moved from place to place, each was designed to be a self-contained entity able to operate largely on its own. In the last year of the war, individual units of squadron size were often grouped together to from larger combined units.

Here is an outline of various air units of different types and nationalities:

Squadron	Fighter, bomber, or reconnaissance unit (British or American)
Flight	Subdivision of a squadron — usually 4 or 5 aircraft (British or American)
Escadrille	Fighter, bomber or reconnaissance unit (French or Belgian); the unit number was often preceded by an abbreviation noting the main aircraft type used by the unit.
Squadriglia	Fighter unit (Italian)
Jagdstaffel (or "Jasta")	Fighter unit (German); numbered 1-80 in rough order of formation
Kette	Subdivision of a jagdstaffel — usually 3 to 6 aircraft (German)
Jagdgeschwader	Group of 4 jagdstaffeln (German)
Jagdgruppe	Group of jagdstaffeln temporarily organized for support of a large offensive (German)
Schlachtstaffel	Ground attack unit (German)
Feld-Flieger-Abteilung (or "FFA")	Reconnaissance unit (German)
Kampfeinsitzerstaffel (or "KEST")	Home defense unit (German)
Fliegerkompanie (or "Flik")	Fighter unit (Austro-Hungarian)

Appendix E

Sources

Through the years when the **DAWN PATROL** game was developing, the designer built up a personal collection of books and materials dealing with World War I aviation. This wealth of information was indispensable in the game's development.

The following books are recmmended to anyone who wants to do further reading on the fascinating subject of World War I aviation:

Air Aces of the 1917-1918 War, by Bruce Robertson (Harleyford / Aero) — capsule histories of all the great aces of WWI and their exploits.

The Balloonatics, by Alan Morris (Jarrolds) — the interesting and relatively unknown story of the balloon service and the balloon busters.

British Aeroplanes 1914-1918, by J.M Bruce (Funk & Wagnalls) — unquestionably the definitive work on all the British aircraft of World War I.

Combat Report, by Bill Lambert (William Kimber & Co.) — the diary of an American pilot flying SE 5as with the British in 1918. Lots of action.

The Day the Red Baron Died, by Dale Titler (Bonanza) — an in-depth account of the circumstances surrounding the death of Manfred von Richthofen in combat on April 21, 1918.

Eagles of the Black Cross, by Walter Musciano (Ivan Obolensky) — the story of the rise of the German Air Service and its history through the war's end, with an emphasis on personalities.

Fighter Aircraft of the 1914-1918 War, by W.M. Lamberton and E.F. Cheesman (Harleyford/ Aero) — a rundown on all the major fighter types, with specs.

Fighting the Flying Circus, by Edward V. Rickenbacker (Doubleday) — the war memoirs of Eddie Rickenbacker, America's Ace of Aces and commander of the 94th Aero Squadron.

The Fighting Triplanes, by Evan Hadingham (Macmillan) — a story of the development of the triplanes of World War I, with emphasis on the Sopwith and Fokker and their service careers. Includes info on all triplanes built.

First of the Many, by Alan Morris (Jarrolds) — the story of the British Independent Force and the first strategic bombing campaign against Germany.

German Aircraft of the First World War, by Peter Gray and Owen Thetford (Doubleday) — information on all the German aircraft of the First World War, operational and experimental.

Hostile Skies, by James J. Hudson (Syracuse Press) — a history of the American Air Service and its rise to prominence in 1918.

I Flew with the Lafayette Escadrille, by Edwin C. Parsons (E.C. Seale & Co.) — the saga of one man's part in the immortal Lafayette Escadrille and an invaluable history of that unique squadron.

Men and Machines of the Australian Flying Corps 1914-19, by Charles Schaedel (Kookaburra) — a history of the Australian squadrons that were a part of the Royal Flying Corps and Royal Air Force.

Offensive Patrol, by Norman Macmillan (Jarrolds) — the story of the British air forces in Italy, 1917 and 1918.

"Pi" in the Sky, by W.F.J. Harvey (Colin Huston) — an incredible history of No. 22 Squadron, RFC and RAF by one of its members. Includes a collection of jingles and flying songs of the RAF.

Reconnaissance and Bomber Aircraft of the 1914-1918 War, by W.M. Lamberton and E.F. Cheesman (Harleyford/ Aero) — a rundown on the major types of bomber and reconnaissance planes, with specs.

Von Richthofen and the "Flying Circus," by H.J. Nowarra and Kimbrough S.Brown(Harleyford/Aero)—an account of the Red Baron's life and career, with the history of his fighter group through the end of the war.

Sopwith — The Man and His Aircraft, by Bruce Robertson (Harleyford) — a history of Sopwith's career and the story of his remarkable aircraft of WWI.

Who Killed the Red Baron?, by P.J. Carisella and James Ryan (Daedalus) — another exhaustive account of the death of von Richthofen, with an inquiry into the controversy surrounding his death.

Wings of War, by Rudolph Stark (Arms & Armour Press) — the fascinating diary of the last year of World War I, by the leader of a German Jagdstaffel.

In addition, some of the fiction of World War I in the air is excellent. The following books are recommended:

The Blue Max, by Jack D. Hunter
A Killing for the Hawks, by Frederick E. Smith
In the Company of Eagles, by Ernest K. Gann
Falcons of France, by Charles Nordhoff and James N. Hall
Squadron 44, by Arch Whitehouse

Finally, one organization deserves mention for anyone who is interested in the history of World War I in the air — the Cross & Cockade Society of World War I Aero Historians. This group is made up of persons interested in the aviation history of World War I, and publishes a quarterly journal which contains in-depth articles on 1914-1918 aircraft, personalities and operations. For anyone seriously interested in the subject, membership in the Cross & Cockade is a must. Information can be had by writing Cross & Cockade, 10443 S. Memphis, Whittier, CA 90604.

Appendix F

DAWN PATROL Organizations

Years of research and playtesting have gone into the **DAWN PATROL** rules to make them as complete and enjoyable as possible. Two organizations have developed that are devoted to **DAWN PATROL** play.The **DAWN PATROL™** Society has been running convention tournaments and play-by-mail games since 1969, and has published more than 85 issues of its newsletter *Aerodrome*. The Society's most famous event is the early morning **DAWN PATROL** tournament held each August at the GEN CON® gaming convention in southeastern Wisconsin. The game is also represented in the TSR ROLE PLAYING GAME ASSOCIATION™ international gamers' group. Under RPGA™ network sponsorship role-playing gamers of all types compete in nationwide tournaments and receive a quarterly newsletter. For information about the groups, write to:

DAWN PATROL™ Society
Mike Carr
c/o TSR Hobbies, Inc.
POB 756
Lake Geneva, WI 53147

RPGA™ Membership
POB 509
Lake Geneva, WI 53147

Please enclose a large stamped, self-addressed envelope to ensure a reply.

Appendix G

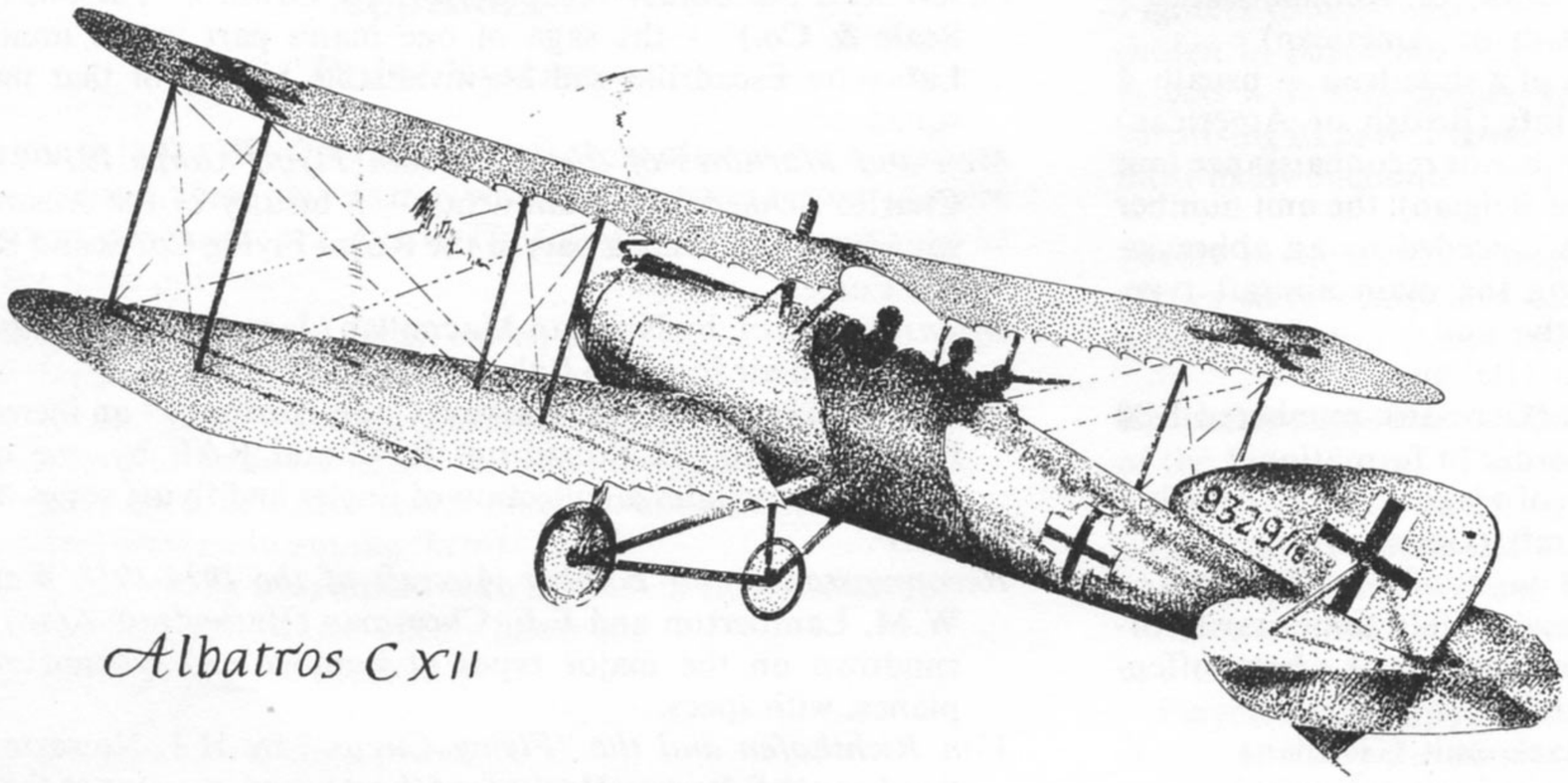
Historical Commentary

The airplane was still a new invention when the world war broke out in 1914. Only a few years before the war armies started to include aircraft in their forces, and these airplanes were used experimentally. Before 1914, plans for the use of aircraft in wartime were uncertain and always hypothetical. As a result, the evolution of aerial warfare that occurred during the years 1914-1918 gave rise to many of the principles of air warfare that are still used in today's jet age.

At the outbreak of the First World War, or the Great War, airplanes were viewed by the military as auxiliary units whose primary duty was to serve the army. This usually meant long or short reconnaissance missions to scout enemy positions and troop movements, where the aircraft would supplement cavalry forces as the "eyes of the army."

At first, there was no war in the air. Enemy aircraft passed each other unhindered, preferring an exchange of salutes to an exchange of gunfire. However, it was not long before the conflict extended to the skies. Two-seaters began carrying armament with an eye toward downing enemy planes. All sorts of ideas were tried (including flying over an enemy and dropping bricks on his plane), but gradually rifle duels gave way to exchanges of machine gun fire between observers in two-seaters.

Fighters (or pursuit aircraft) appeared as single seat planes designed exclusively for fast pursuit and escort work, with greater maneuverability and speed than the lumbering two-seaters. Fighters were built to attack enemy bombers and reconnaissance aircraft (although this was a new concept and evolved as the war went on). By 1918 the fighter had progressed to a point where it was adaptable to several tasks, including offensive work against enemy ground forces and balloons. In 1917 and 1918, special fighter-like planes were developed for use exclusively in ground attacks, including the specially designed metal Junkers aircraft. The Germans organized several squadrons whose primary duty was ground attack and infantry



Albatros C XII

support. Many of the British fighters were also adaptable to a ground attack role carrying 20-pound Cooper bombs. During offensives, this dangerous low-level work was common.

The fighter really came into its own on April 1, 1915, when the French pilot Roland Garros shot down two German two-seaters while flying a Morane-Saulnier monoplane with a machine gun mounted ahead of the cockpit and firing through the propeller.

Garros' idea revolutionized air warfare. His idea was simple but, for the time, ingenious. He mounted a machine gun in front of his seat with the muzzle pointing through the propeller's arc, allowing him to aim effectively by pointing the airplane at the target. Although some bullets might strike deflector plates fixed to the prop, enough would pass through to destroy an enemy plane. The mechanism was crude but it worked, and puzzled and surprised Germans fell before Garros' guns. Not until later in April when Garros was forced down in enemy territory did the Germans learn the secret of his success. They immediately went to work on a device to counter the French idea.

The Germans surpassed the French design with a more elaborate and effective interrupter gear that was almost foolproof. It was designed by Anthony Fokker, who later became famous for his aircraft designs and manufacturing concerns. The interrupter gear prevented the guns from firing when the propeller was blocking the bullet's path. It eliminated the risk, always present with Garros' design, that a deflected bullet could strike the engine.

With their interrupter gear and their maneuverable (for that time) Fokker Eindekker monoplanes, the Germans quickly gained the upper hand over British and French planes that were not similarly equipped. The rise of the expression "Fokker fodder" illustrates the success of these types in the last half of 1915 and the first half of 1916. The Allies could not produce an aircraft with a similar arrangement, so they relied on "pusher" planes, unorthodox designs that put the pilot in front of the engine, which pushed instead of pulled the aircraft. These planes were a match for the Fokkers, but before long the Albatros fighters made the pushers easy meat for their attacks.

The Albatroses, beginning with the D I model, quickly gained air superiority over most Allied planes. Their speed and maneuverability was superior to most existing types when they were introduced, and the Albatros' twin Spandau machine guns gave them a distinct firepower edge over the single-gun Allied types.

The Allies tried everything to solve the problem of firing through the propeller. Besides the pusher idea, they tried mounting Lewis machine guns on the top wings of Nieuport biplanes, allowing the gun to fire over the propeller arc. Although this worked, it was not as effective as the German arrangement.

Finally the Allies came up with a synchronizing device designed by George Constantinesco, a Rumanian designer. This device was the most effective of several designs, and gave the Allies a chance to catch up to the German superiority in armament. The C.C. gear, as it was called, was installed on some of the new Allied aircraft in 1917 and established some balance in the air war.

The Allies regained superiority in the last half of 1917 when their new designs (Sopwith Camel, S.E. 5, S.P.A.D. XIII and Bristol) met the German first-line equipment (Albatroses and Pfalzes). Later the Germans, with the advent of the Fokkers and other successful types, again tipped the scales in their favor until the end of the war. The advantage was slight, however, and in the last year of the war the quantity of Allied fighters increased steadily and helped to counter any German superiority in quality.

Reconnaissance and bomber aircraft played important roles in the evolution of aerial warfare during the Great War. Unfortunately, their importance often seems diminished by the attention given to the more glamorous fighters. Reconnaissance planes almost always were two-seaters, with a pilot flying the plane and an observer scouting and/or photographing enemy positions or movements. Recon planes were sometimes involved in artillery observation missions, observing friendly fire on enemy positions and relaying range corrections to the ground via pre-arranged signals or one-way wireless. In any case, reconnaissance aircraft were very important to army operations and the success of their missions depended on their ability to penetrate enemy lines, get the job done and return safely. This meant constant duels with enemy anti-aircraft guns and hostile fighters. Reconnaissance work was dangerous, but it had to be done. Often the observer had to protect the plane from enemy fighters to escape. Since the recon planes lacked the maneuverability to fight effectively, fighter protection became important and air battles often developed around reconnaissance machines.

Bombers came into their own in World War I just as fighters did. Most tactical bombing was done by fighters equipped with bombs, but strategic bombing was handled by specialized bombers designed to deliver a heavy bombload at long range. The bombers usually operated independently of fighters and almost always traveled in groups for mutual defense. Night missions for bombers were common, although night missions for fighters and recon planes were rare. The effects of bombing were more often psychological than real, but the bomber operations of World War I laid the groundwork for the mass bombing that became important in the Second World War.

Historically, the aerial warfare of World War I had little effect on the outcome of the war itself. The war was ultimately decided on the ground, and the action in the air only supplemented that fighting. The evolution of air fighting during World War I is important because it heralded a new era in warfare. The rise of airpower, so important later in the Twentieth Century, had its crude beginnings during the Great War.

For the average person, the air action of the First World War provides an interesting and exciting contrast to other aspects of that conflict. The romanticist can envision a last revival of the age of chivalry, when men dueled each other alone under a common code of honor.

Of course, the war in the air wasn't always as full of excitement and heroics as we might imagine it was. Thousands died in the air just as many thousands died on the ground, and the deaths were just as gruesome as those below. Because the war in the skies was more personal does not mean it was more glorious.

But the war in the air did contain many exciting chapters, and some of the elements of personal combat are not completely unlike that of medieval times. A study of the actions, the aircraft and the personalities of aerial combat during World War I is a fascinating subject. Perhaps Captain Duncan Grinnell-Milne, himself a pilot with the RFC/RAF during the First World War, summed the feeling up best in this quotation:

"Aerial fighting as it was in those days will never be seen again. Of all that time not much is left other than a few memories of adventure, sometimes comic, often tragic, yet always zestful enough to stimulate even now a quicker beat of the pulse."

Appendix H

Honor & Chivalry Among Airmen

From the beginning, the DAWN PATROL game was designed to recreate the feel of World War I aerial combat. It's no coincidence that the aspects of honor and chivalry have come to assume great importance to serious players over the years. It would be an omission to conclude these rules without mentioning the concepts that have gained wide acceptance in reflecting honor and chivalry among fliers. The camaraderie that has grown up among DAWN PATROL players is undeniable, and this style of play reflects it.

Table Talk

Although banter among players is a common part of many DAWN PATROL games, good players avoid discussing strategy or tactics once a game has begun. Players should never suggest moves, targets or attack angles to other players, and "hints" should be similarly avoided.

The limited intelligence aspect requires discretion and honesty on the part of all players. Pilot personalities should be chosen and noted by all players before they know opposing aircraft types and starting altitudes. The presence of experienced and Ace pilots should remain secret until combat is joined. Rolls for parachutes are taken without reminders to wingmen.

Damage given to opposing players should be recorded by the shooting player only to show the total number of hits scored, not where each hit was scored. Hits scored can only be discussed among wingmen for the *last* turn of shooting; prior shots cannot be mentioned.

Gun jams and critical hits, because of their crucial nature, are never mentioned during play.

Breaking off combat is a decision to be made by each pilot, never by consulation or agreement. The only way a pilot may indicate to his wingman his desire to leave the game is by announcing his intention to do so within the parameters of the Escape From Combat rule. Once a plane is removed from play by its pilot, it may not return to the game.

Head-On Attacks

Head-on attacks, because of their potency, are not undertaken lightly. Those who live by the head-on attack usually die by the head-on attack, as their opponents seek to return the favor under less advantageous circumstances.

Head-on attack against planes with jammed guns—or fewer guns—are considered unchivalrous. Attacking experienced or Ace pilots head-on with lesser pilots is considered the lowest tactic of all, deserving of the most vigorous reponse by the attacked player and his wingmen.

Going to the aid of a wingman who has been subjected to an unexpected head-on attack by those moving later in the turn is considered a brave gesture. By making an additional head-on attack, the wingman moving later can greatly aid his comrade in returning the fire.

Two-Seaters

The tactics used by and against two-seat aircraft will vary, but certain angles of attack will resemble the "two-edged sword". This is because single-seaters and two-seaters each have ways to place the other at a great disadvantage. Refraining from those tactics keeps play fairly balanced and much more interesting.

Single-seat fighters with two guns should not engage in head-on attacks with the pilots of single-gun two seaters. If they do so, they may find themselves on the short end of a counter-tactic...

Two-seaters, *unless moving in for another attack by the pilot at the same time,* should not place themselves in front of enemy planes to give the observer a head-on attack. If they do so, they tend to encourage attacks like that mentioned in the prior paragraph.

Aces & Experienced Pilots

Aces and experienced pilots (those having reached a level of at least 5 kills or 12 missions) are considered veterans. The most accomplished member of any flight becomes the flight leader —largely an honorary designation, but one which gives the appropriate player the honor of rolling the starting altitude of the group.

Aces and experienced pilots are earned only through continuing play, and they are afforded a special respect. Many players come to know each other's better pilots by flying with and against them on numerous occasions, sharing the great moments of their careers as wingmen or adversaries. They know their reputations, and salute them for their accomplishments. The honor of respected foes (or even hated ones!) is strong, and their loss can be felt almost as keenly.

Wingmen should always be concerned with protecting a fellow flier, but never more so than when he is an Ace or experienced pilot. To save an endangered Ace is considered the most courageous of all acts, and worthy of honor and recognition among fellow fliers. To do so by risking or sacrificing your own pilot is the greatest expression of honor and devotion that is possible.

Atrocities

The chivalrous code of conduct precludes taking advantage of helpless opponents — most notably, those which are gliding with dead engines, pilots with critical wounds, landing planes, or those which have jammed guns. To do so is a dishonorable act unworthy of a skilled pilot who has any respect for his fellow airman.

Of course, since deception is possible, it is not always possible to ascertain who is helpless and who is not. But the experienced player eventually learns when he can and cannot give the benefit of the doubt to his opponent.

Honesty

Honesty and trust are the cornerstone of true enjoyment of the game, and it is essential that serious players embrace these ideals. Each player in the group must have the trust of the others in order to retain their respect. This carries over into several areas.

First of all, pilot rosters should be kept with accuracy and care. All missions gained must be earned in games of 4 or more players, each flying a single plane. If a pilot began his career with prior missions or kills under the variable system (see Missions, Kills & Pilot Experience Advanced rule), the starting number of missions and kills should be noted.

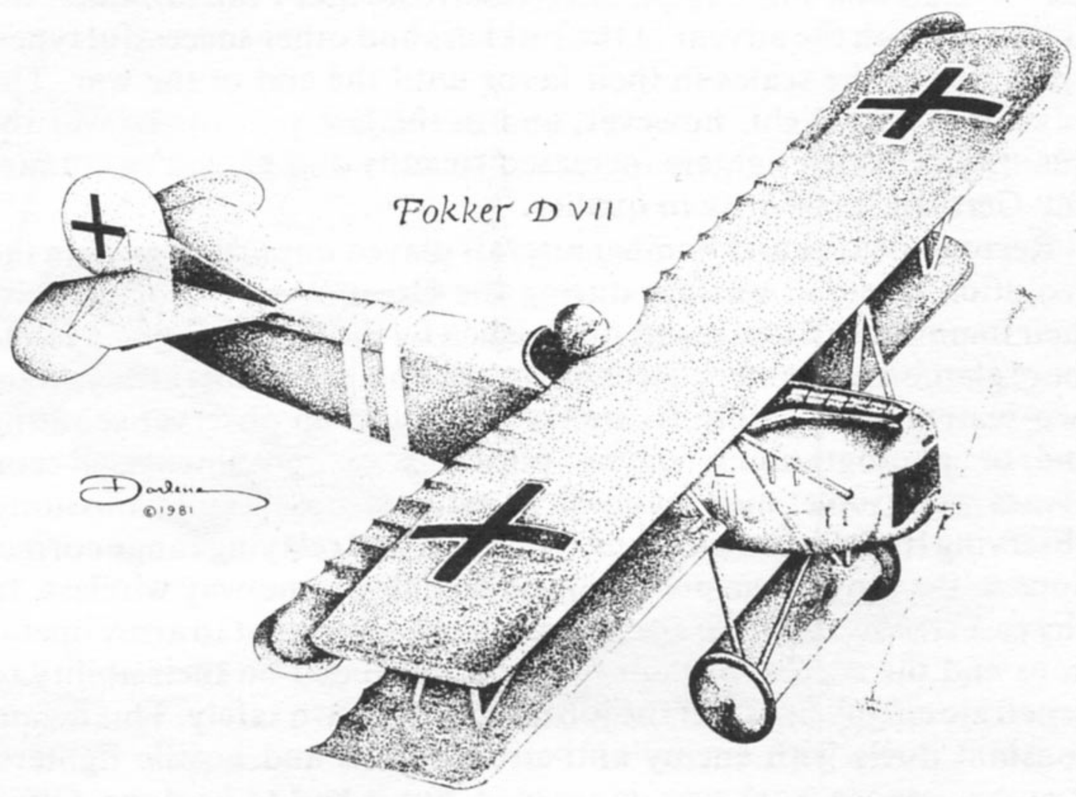
The loss of pilots must be accepted by all players as final, and in a sense, inevitable. The temptation to "fudge" the dice rolls to favor survival must be scrupulously avoided. These rolls, like others which may be open to question, should be made in the view of other players — with a statement of what each roll is for *before* the dice are cast.

Rolls for shooting to hit or miss and determining hit locations should be rolled openly on the table. Rolls for number of hits, gun jams, and critical hits can all be handled secretly if players are knowledgeable and trust each other implicitly. One further option to the limited intelligence approach is to have each pilot determine his *own* damage after finding out how many hits he has taken. In doing so, he keeps the distribution of hits a secret, only informing the shooter as to how many pilot hit chances there are. This adds an extra dimension, since shooters do not know how close their targets may be to being shot down.

* * * * *

Those who play this game a lot have come to share a common bond — a mutual respect based upon the ideals of honor and chivalry. Their style of play reflects it and does justice to the memory of World War I in the air — a time when these ideals had an acceptance which is now gone from warfare. If you play often enough with others outside your normal group of players, you'll feel the comaraderie, too.

What of those few who may not subscribe to these ideals? A player who does not will perhaps enjoy temporary success, but his opponents will usually respond with tactics that will work the same way against him. This doesn't mean that having a particular pilot who flies more aggressively (or even unchivalrously) is not possible — for that can spice up a few games and build some rivalries. But in the end, players will find most often that "those who live by the sword, die by the sword".



Appendix I

Medals and Commendations

Pilots who compile successful service records eventually become eligible for medals and commendations. Each nationality has its own awards and honors to bestow on its most successful airmen. Refer to the full-page listing which appears on the cardstock pull-out chart.

Medals and commendations fall into two categories — those given for length of service (and achievement) and those given for a specific act of outstanding bravery. Winning these awards also depends on luck; service records show that political, personal and bureaucratic factors often affect the timeliness of awards, much to the consternation of the deserving pilots.

Awards for bravery are given in three categories:

A) For a suitable accomplishment or act of bravery;
B) For an outstanding accomplishment or act of bravery;
C) For the most outstanding accomplishment or act of extreme bravery.

Granting these awards involves some subjective judgments. After a game in which a player feels his pilot qualified for consideration, that player or his wingmen should make a formal appeal for the award (assuming the pilot meets all experience prerequisites for the commendation). This proposal is discussed by all players present.

Category **A** awards could be given to a pilot who scored an important double kill, who scored a confirmed kill over an enemy ace of at least 36M/15K, who drove away a larger force of enemy planes, or who saved the life of an experienced wingman and so on. If all friendly wingmen agree the flier deserves the award, a roll is made at the appropriate time.

Category **B** awards might be presented for scoring a triple kill, rescuing a wingman downed behind enemy lines, or acting as flight leader for an unusually successful mission where damage to the enemy was severe while friendly losses were minimal, and so on. If all friendly wingmen present agree, and no more than one opposing player dissents, a roll is made at the appropriate time.

Category **C** awards are for only the most outstanding events, the kind a player may see once in 200 games. Such a proposal must have the approval of all friendly wingmen, may be opposed by no more than one enemy player, and must be presented (if at all possible) to two other players who were not at the game in question. If they agree, the roll is made the next time the group gets together.

Generally, rolls for awards should be made immediately following the game in which a pilot becomes eligible. All rolls for awards must be announced by the eligible player before the die is rolled and should be witnessed by at least three other players.

When an additional chance to win a service award is indicated, the eligible pilot continues to check only the category (either missions or kills) he first became eligible in. When checks for each additional kill are indicated, a double or triple kill allows only one additional check, not two or three. Once an award is received, no further checks for it are made.

Where an exact number is listed under Number Presented, it is the number of airmen who are known to have received the award.

Prussian medals are awarded to Prussian airmen as well as all Germans, since they are the official awards of the German Empire. German fliers from Bavaria, Saxony or Wurttemberg may also qualify for their own set of awards. An assortment of medals given by the lesser German states is embodied in the "Extra" Awards subtable. All German officers may qualify for these extra awards after winning the Knight's Cross of the Royal House Order of Hohenzollern.

Note that Prussian awards are never given posthumously or to POWs. Awards can be given to captured or killed fliers of other nationalities, when appropriate.

The German Orden Pour le Merite often was announced only to have the actual award delayed. A number of the awards were never presented at all, due to the war's end. This is reflected by requiring a second roll to actually receive the medal. There will be some disappointments!

Credits

This game was first conceived in 1966 by the designer, Mike Carr, who admits the motion picture "*The Blue Max*" inspired the idea of a realistic game based on aerial combat in World War I. Since the original crude design, the game has been constantly evolving into a more realistic and playable version through the help of many interested persons. Their suggestions on new rules, revisions and historical additions have gone far toward improving the game. The author is indebted to all of them for their assistance.

Design: Mike Carr
Development: Steve Daubenspeck, Charlie Faught, Mike Gray, Bill Heaton, Rick Johnson, Kurt Krey
Optional Rules: Paul Cote (Ground Attack, Observation Balloons, Critical Hits, Optional Tailing, Range/Firepower Effectiveness), Steve Daubenspeck (Gun Jamming), Chris Janiec (Low-Level Flying, Wounded Pilot, Ground Attack, Critical Hits), George Patton (Range/Firepower Effectiveness), Chris Weiser (Landings and Takeoffs, Critical Hits), Ed Werneke (Gun Jamming).
General Help and Suggestions: Baron Anderson, Jim Barber, Alan Christensen, Paul Cote, Phil Grant, Harry Hohman, Mike Huggins, Chris Janiec, Dave Jedlicka, Mike Kennedy, Steve Knoop, Kerry Nash, Jon Pickens, Chris Weiser, Bob Zobal
Editing: Barbara Johnson, Deborah Ritchie, Steve Winter
Cover Art: Mike Hagel
Game Map: Harry Quinn
Interior Art: R. Anderson, Darlene Pekul

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Advanced Sequence of Play

The following outline shows the four major phases of each game turn, and describes when particular operations are undertaken, resolved, and/or announced.

Pre-movement phase

1. Players with wounded pilots roll to determine consciousness/unconsciousness.
2. Players who want to break off combat announce their intention to escape.
3. Any engine on/off decisions are made and announced.
4. Pilots making parachute jumps abandon their planes.
5. Aircraft emerging from clouds are placed on the board at the positions from which they will start the turn.

Movement Phase

6. Random movement order is determined (tail attacks are a factor; successful reversals may change the exact order of movement if they occur during a turn); non-fighters and burning aircraft add one to their rolls.
7. Players involved in tailing choose cards.
8. Players move in the following order:
   a. planes that are out of control
   b. planes that are attempting to land
   c. planes gliding with engines off
   d. planes gliding at low throttle
   e. planes taxiing or taking off
   f. planes at low altitude (more than 2000 feet below others)
   g. all other planes

   Players record their throttle speed after moving.
9. Each player, upon completing his move, makes the decision whether or not to target on any single aircraft in his field of fire. If he chooses to target, he has committed himself to the shot and may not fire at other aircraft moving later in the turn (unless defending against a head-on attack). If he chooses not to target, he passes up the opportunity to fire at any of those aircraft already in his field of fire, but may decide at the end of all movement to fire on any aircraft which has moved into his field of fire subsequently. Observers always target at the end of all movement.

Post Movement Phase

10. Players attempting overdives roll for possible breakup.
11. Players with burning aircraft roll to extinguish fires.
12. Players who are attacking roll for possible gun jams.

Resolution Phase

13. All attacks are resolved simultaneously.
14. Players whose planes were damaged roll for critical hits. Players must announce visible effects such as smoke or loss of control.
15. Players attempting to land or take off roll for success. Crash types are determined and pilots roll for survival.
16. Players announce tailing attempts for the next turn.
17. Players who did not attack roll to reload guns or clear jams.
18. Players with jammed controls attempt to clear them.
19. Planes that have met the requirements for escaping from combat are removed from the board.
20. Planes that were shot down out of control are removed from the board.

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088-R-7008

ROLE PLAYING ASPECTS

Developing the personalities of individual pilots and keeping track of their flying careers gives the game much of its excitement and unique flavor. Each player maintains his or her own roster of pilots, with each assigned to fly a particular type of aircraft. Those who survive will earn experience bonuses, becoming more dangerous adversaries and more valuable wingmen. Promotions, commendations and medals are further rewards for the veteran pilot.

This section is divided into nine parts:

Pilot Rosters
Pilots and Aircraft
Missions, Kills and Pilot Experience
Starting Experience
Nationality
Rank and Promotions
Age
Pilot Names
Medals and Commendations

Pilot Rosters

A pilot roster is a list of a player's pilot characters. Pilots and observers are either Allied or German/Austro-Hungarian, and each is assigned to one or more specific aircraft (see Pilots and Aircraft). Each listing should include the character's name, aircraft type and a tally of his missions and kills. Many players will want to list more information, including rank, national origin, a complete record of kills and so on. Index cards are handy for recording pilot rosters.

The roster outline below shows the minimum number of pilots that should be listed for each nationality and the types or groups of aircraft each can fly.

The outline below shows a complete pilot roster. All the planes in each group can be flown by one pilot. Players can assign a pilot to each aircraft type if they wish.

Pilot Roster Outline

U.S.
1) Nieu 28/Camel/S.P.A.D. XIII

French
1) Nieu 17/S.P.A.D. VII
2) M-S AI/S.P.A.D. XIII

British
1) Nieu 17/S.P.A.D. VII
2) Pup/DH 5/Triplane
3) SE 5/SE 5a
4) Camel/Dolphin/Snipe

Italian
1) S.P.A.D. VII/HD-1/Nieu 17/S.P.A.D. XIII

Belgian
1) Nieu 17/S.P.A.D. VII/HD-1

Austro-Hungarian
1) Oeffag/Phonix/Berg

German
1) Alb D II/Roland D IIa/Alb D III
2) Alb D V/Alb D Va
3) Pfalz D III/Pfalz D IIIa
4) Fokker Dr I
5) Roland D VIb/Pfalz D XII
6) Fokker D VII/Fokker D VIII/SSW D IV

One two-seated pilot and one observer may fly all two-seater planes of one nationality. The only exceptions are the British Bristol and the German Hannover/Halberstadt family, which are tighter types and should have a specific pilot and observer assigned to them. Other two-seater pilots and observers can be added as needed.

A sample of a player's British roster with experienced pilots might look like this:

Lieutenant Edward Strong (Nieuport 17/S.P.A.D. VII)
Missions: 5 Kills: 1
Lieutenant Robert Penworthy (Sopwith Pup/DH 5/Triplane)
Missions: 0 Kills: 0
Captain Samuel Foxxe (SE 5/5a)
Missions: 14 Kills: 5
Lieutenant Malcolm Lansing-Jones (Camel/Dolphin/Snipe)
Missions: 8 Kills: 0
Lieutenant Michael Stone (Bristol Pilot)
Missions: 3 Kills: 0
Sergeant Lew Baxter (Bristol Observer)
Missions: 1 Kills: 1
Lieutenant Harold Cleveland (Two-Seater Pilot)
Missions: 4 Kills: 0
Sergeant P.C. Honeywell (Two-Seater Observer)
Missions: 6 Kills: 2

Pilots and observers remain active and on the roster until they are lost in action (killed or captured) or forced to retire due to injuries. Characters lost in action are removed from the current roster and their place is taken by a new character. A player may voluntarily retire a pilot or observer at any time.

Retirement becomes mandatory if a pilot's number of kills reaches the highest number historically recorded for his nationality. This is the highest pinnacle of success a pilot can hope to obtain. These historical records are as follows:

Central Powers		Allies	
German	80	French	75
Austro-Hungarian	40	British	73
		Belgian	37
		Italian	34
		American	26

As a final note, it should be mentioned that rostered pilots and observers belong solely to the player who has flown them and earned their missions and kills. Characters may never be used by anyone but the player who owns them.

Pilots and Aircraft

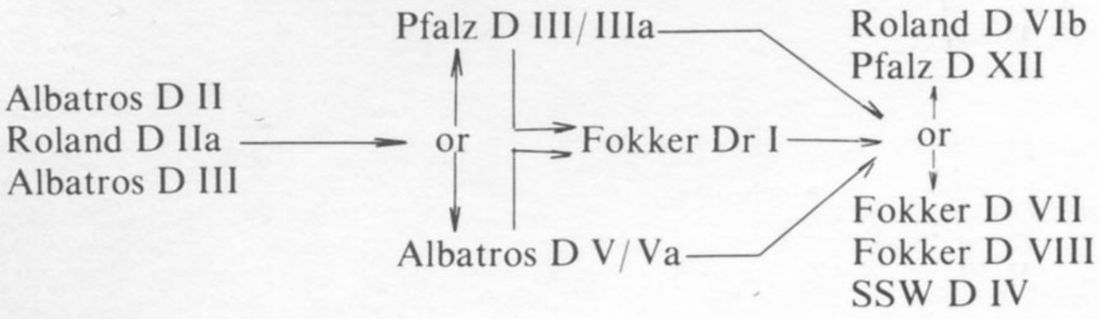
The roster outlined above shows the aircraft types and families individual pilots may be assigned to. The assigned pilot can fly any of those aircraft whenever they appear in a game.

In this game pilots do not have to fly missions in chronological order; they may fly any mission while their plane is in service. For example, one mission might be flown in a Fokker Dr I in July of 1918 and a subsequent mission flown in February. It is not necessary to keep track of exact mission dates, as the Pilot Experience Rules are flexible within the historical context of the game.

Several nationalities require only a single pilot on the roster, who can fly several types of aircraft interchangeably regardless of the date. Pilots of other nationalities — German, French and British in particular — may, at the player's option, progress to newer aircraft (doing so, in a sense, as the war goes on). Pilots can move up any time a vacancy exists on the roster in a later aircraft type. The pilot must have flown at least six missions before advancing for the first time, but after that may freely move on to later types whenever an opening occurs.

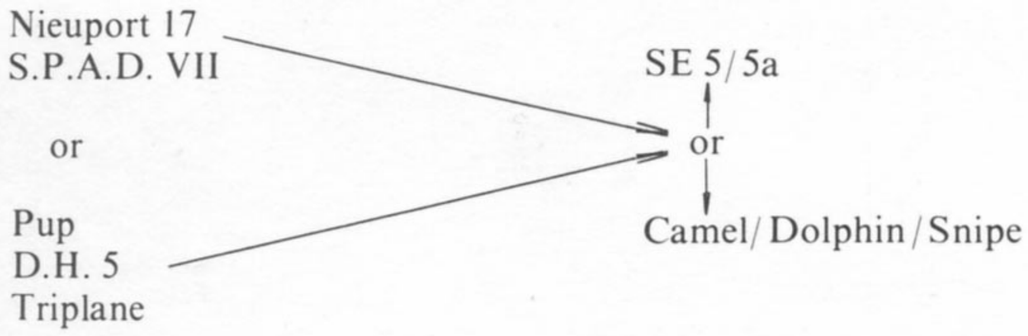
The charts below show the aircraft types and families, and the arrows show the possible progressions. Progression must be in the direction of the arrows. Once a pilot has progressed, he may not return to his former aircraft or other earlier types. It is possible to skip a particular family of aircraft when progressing.

German Pilot Progression
(optional)



Note: The Fokker Dr I can be by-passed if desired.

British Pilot Progression
(optional)



French Pilot Progression
(optional)

Note: "or" indicates two aircraft families that are distinct and separate, but that flew in the same period and occur in the same place in the sequence.

Pilots of other nationalities can fly all types of aircraft interchangeably without regard to progression.

Missions, Kills & Pilot Experience

The foremost objective of every air fighter is gaining experience —experience that will help him survive the rigors of combat and give him the edge over his adversaries.

Pilots and observers gain experience bonuses in two ways: by flying missions and by shooting down enemy aircraft. There are several levels of experience. Pilots make minor gains on the first and second missions. After this, each level is reached by accumulating a multiple of twelve missions or five kills. Experience levels and bonuses are outlined below.

Missions: To gain credit for a mission, a pilot must participate in an air battle and must fire or be fired at within normal range at least once during the combat. *Missions should be credited only in games with four or more players, each flying a single plane.* To allow credit for small missions would give some players an unfair advantage.

Kills: Kills are awarded for planes shot down or forced down. A kill is credited to the pilot who is responsible for sending the plane down. If two or more pilots hit an area which causes an enemy plane to go down, whichever one scored the most hits in that area gets credit for the kill, while the others get an "assist". Although in World War I it often was impossible to know for sure who had delivered the fatal burst, in **DAWN PATROL** games it usually will be apparent which pilot inflicted the most damage or scored the fatal hit. In some cases, however, two pilots may both have a reasonable claim on a kill. Kills are not shared, so the two claimants should cut a deck of cards for credit (a WWI tradition). If two pilots have an equal claim on a kill and one does not return from the mission, the kill still must be cut for; credit does not go to the surviving pilot by default.

Some kills can be delayed or unknown, as when a pilot hits the engine of a plane and causes a critical hit with a delayed result such as an oil leak. If the damaged plane flies into a cloud and several turns later its engine seizes, it would be a kill. However, no claim could have been submitted unless someone actually saw the plane go down. In cases where exact determination is impossible, the players should set some reasonably reduced chance of credit being received. They should keep in mind what might have been seen and reported by ground observers, and the location of the dogfight (which side of the lines, and how far behind the lines). The chances of receiving credit for an unconfirmed kill should never exceed 50% and should be less than 30% in most cases. After the players reach general agreement on a suitable percentage, the player making the claim may roll the dice. This procedure is used only when a plane has actually been downed; "possible" kills can never be credited.

Pilot Experience: The steps for gaining pilot experience in face-to-face play are:

1st Mission (Novice Pilot):
- double ones hits pilot
- no tailing allowed

2nd Mission:
- double ones or twos hit pilot
- all normal abilities

3rd-12th Mission:
- double ones, twos or threes hit pilot
- all normal abilities

When pilots reach the following steps by accumulating either missions or kills, they are classified as Experienced Pilots. The benefits may be obtained by either method, and as soon as a pilot qualifies in missions or kills he advances to the next step. Use the outline below when playing the Advanced Game. "Up one table" means shifting one column to the right on the Range/Firepower Effectiveness Hit Table, while "down one table" means shifting one column to the left.

12 missions/5 kills:
- up one table when shooting
- one extra tailing card
- double ones, twos, threes or fours hit pilot
- +5% landing chance

24 missions/10 kills:
- up one table when shooting
- two extra tailing cards
- +5% landing chance
- double ones, twos, threes, fours or fives hit pilot
- one, two or three hits pilot on CW head-on hits at 200 feet or less
- can make 600-foot attacks on 500-foot table

36 missions/15 kills:
- up two tables when shooting
- three extra tailing cards (only two with Optional Tailing)
- any doubles hit pilot
- +5% landing chance
- one, two or three hits pilot on CW head-on hits at 200 feet or less
- one point bonus on movement order
- can make 600-foot attacks on 500-foot table

48 missions/20 kills:
- up two tables when shooting
- four extra tailing cards (only three with Optional Tailing)
- any doubles hit pilot
- +5% landing chance
- one, two or three hits pilot on CW head-on hits at 200 feet or less
- one point bonus on movement order
- can make 700-foot attacks on 500-foot table
- gets extra tailing defense maneuver card when being tailed
- +5% jam clearing chance

60 missions/25 kills:
up two tables when shooting
five extra tailing cards (only four with Optional Tailing)
any doubles hit pilot
+10% landing chance
one, two or three hits pilot on CW head-on hits at 200 feet or less
two point bonus on movement order
can make 700-foot attacks on 500-foot table
gets extra tailing defense maneuver card when being tailed
moves down one table when being shot at

The last step (60 missions or 25 kills) is the maximum level for experience. It should be noted that when shooting is improved and a pilot moves up tables for results (e.g., from table G to I), *he may never move up more than two tables.* Table M is the upper limit for twin guns, and Table I is the limit for single guns.

The bonus on movement order may be used by the experienced pilot (with at least 36 missions/15 kills) whenever he wishes. Once used, however, the bonus must be used on all subsequent game turns. The adjustment is effective only on the initial determination — it does not affect a roll-off to break a tie.

A tailing defense card is a special ability of pilots with 48 missions or 20 kills (or more). When tailed, the pilot chooses his regular evasive maneuver plus an alternate. If the tailing pilot holds a card that matches the first maneuver, the leading pilot may disregard it and perform the alternate maneuver. He must decide which maneuver to use without knowing whether the second choice is covered.

Gunner/observers of two-seat aircraft also gain experience bonuses, but in only two steps. Observers on their first, second or third through twelfth mission have the same chances to hit pilots as pilots do. After obtaining either five kills or 12 missions, they are considered experienced. The two experience steps for observers are:

12 missions/5 kills:
does not shift down one table when shooting
double ones, twos, threes and fours hit pilot
additional +5% chance of clearing jammed gun
may make 600-foot shots on 500-foot table

24 missions/10 kills:
does not shift down one table when shooting
double ones, twos, threes, fours and fives hit pilot
one, two or three hits pilot on CW head-on hits at 200 feet or less
additional +5% chance of clearing jammed gun
may make 700-foot shots on 500-foot table
never needs to roll for reloading

Starting Experience

The traditional method for starting new pilots assumes all pilots and observers have no experience (no missions and no kills) when they are assigned to the player's roster. Several pilots may be assigned to each aircraft type to provide backups. Pilots follow the usual progression for moving up to later aircraft types. In addition, aircraft families may be broken down into types and an individual pilot assigned to each (two-seaters are not usually divided this way, because of the large number of types).

An alternative method allows pilots to join the roster with varying levels of experience, but places rigid restrictions on their use.

When the variable experience method is used, two dice are rolled for each new pilot, using the table below. The dice combination gives the number of missions the pilot has flown, an adjustment to the pilot's rank roll and a chance that the pilot already has earned one or more kills when assigned to the player's roster.

The roster should be exactly as outlined under Pilot Rosters when using this method. One and only one pilot is listed for each aircraft type or family; there are no backups. Whenever a particular type of plane is called for in a game, the assigned pilot must fly it. A replacement cannot be made until the assigned pilot either is lost in action or progresses to another vacant position. Players may not roll up several pilots, discard those without experience and keep only the best pilots.

In addition, a record should be kept of how much experience each pilot started with, to allow temporary adjustment in games with players using the traditional method.

Initial Pilot Assignment

Dice Roll Combination	Missions	Chance of Kills*	Adjustment to Initial Rank Roll
1/1	0	0	-
1/2	0	0	-
1/3	0	0	-
1/4	0	0	-
1/5	0	0	-
1/6	0	0	-
2/2	0	0	-
2/3	0	0	-
2/4	1	0	-
2/5	1	0	-
2/6	2	Roll of 1=1; 2-6=0	-
3/3	3	Roll of 1=1; 2-6=0	-
3/4	4	Roll of 1,2=1; 3-6=0	-
3/5	5	Roll of 1,2=1; 3-6=0	-
3/6	6	Roll of 1,2=2; 3=1; 4-6=0	-
4/4	7	Roll of 1,2=2; 3=1; 4-6=0	-
4/5	8	Roll of 1=3; 2=2; 3=1; 4-6=0	-
4/6	9	Roll of 1=3; 2=2; 3=1 4-6=0	-
5/5	10	Roll of 1=4; 2=3; 3=2; 4=1; 5,6=0	+1
5/6	11	Roll of 1=4; 2=3; 3=2; 4=1; 5,6=0	+1
6/6	12	Roll of 1=5; 2=4; 3=3; 4=2; 5=1; 6=0	+1

* *Two-seater pilots and observers add one to the die when rolling for kills.*

Nationality

Determining nationality introduces an extra element of realism into a pilot's background. In the case of German pilots, it also will determine their eligibility for certain medals.

Using nationality and other background information allows players to make up biographies for their pilots and add details to each one's identity. The player should first decide what country his pilot is from. He then rolls two dice to determine regional origin.

American		Belgian	
2	Middle Atlantic (DE, MD, NJ, NY, PA, VA)	2	Flemish
3	New England (CT, MA, ME, NH, RI, VT)	3	Flemish
4	Northwest (ID, MT, NV, OR, WA, WY)	4	Flemish
5	Southwest (AL, FL, GA, MS, NC, SC)	5	Flemish
6	New England (CT, MA, ME, NH, RI, VT)	6	Flemish
7	Middle Atlantic (DE, MD, NJ, NY, PA, VA)	7	Flemish
8	Great Lakes (IL, IN, MI, MN, OH, WI)	8	Flemish
9	South Central (AR, KY, LA, MO, TN, WV)	9	Walloon
10	Plains (IA, KS, NB, ND, OK, SD)	10	Walloon
11	Southwest (AZ, CA, CO, NM, TX, UT)	11	Walloon
12	Southwest (AZ, CA, CO, NM, TX, UT)	12	Walloon

British		Italian	
2	Rhodesian	2	Sardinia
3	South African	3	Sicily
4	Welsh	4	Piedmont
5	Scottish	5	Tuscany
6	English	6	Latium
7	English	7	Campania
8	English	8	Venezia
9	Canadian	9	Lombardy
10	Australian/New Zealander	10	Apulia
11	American	11	Liguria
12	Irish	12	Calabria

French

The French Air Service includes its native sons and a mixture of pilots of other nationalities attracted by the liberal French recruiting policies.

		Lesser Allies/ Neutrals Subtable
2	French	2 Montenegran/ Luxembourger
3	French	3 Norwegian/ Danish (N)
4	French	4 Spanish (N)
5	French	5 Russian
6	French	6 Italian
7	French	7 Serbian
8	French	8 Rumanian
9	French	9 Portugeuse
10	Roll on subtable	10 Dutch (N)
11	American	11 Swedish/ Swiss (N)
12	Roll on subtable	12 Japanese/ Chinese

Austro-Hungarian		German	
2	Czech	2	Prussian
3	Slovakian	3	Prussian
4	Croatian	4	Saxon
5	Magyar (Hungarian)	5	Prussian
6	Austrian	6	Bavarian
7	Austrian	7	Saxon
8	Austrian	8	Wurttemberger
9	Magyar (Hungarian)	9	Prussian
10	Bosnian	10	Bavarian
11	Slovene	11	Wurttemberger
12	Czech	12	Prussian

Rank and Promotions

Every new flier placed on the roster is given a rank determined by rolling one die. The charts below list starting ranks for each nationality, along with a list of the flying ranks characters will move into as they are promoted. Listings in italics are enlisted or non-commissioned officer ranks.

French and Belgian

Starting Rank	Flying Ranks
1 *Sergent*	*Sergent*
2 *Adjudant*	*Adjudant*
3 Sous-Lieutenant	Sous-Lieutenant
4 Sous-Lieutenant	Lieutenant
5 Lieutenant	Capitaine
6 Lieutenant	

American

Starting Rank	Flying Ranks
1 2nd Lieutenant	2nd Lieutenant
2 2nd Lieutenant	Lieutenant
3 Lieutenant	Captain
4 Lieutenant	Major
5 Lieutenant	
6 Lieutenant	

Italian

Starting Rank	Flying Ranks
1 *Sergente*	*Sergente*
2 *Sergente*	Sottotenente
3 Sottotenente	Tenente
4 Sottotenente	Capitano
5 Tenente	Maggiore
6 Tenente	

British

Starting Rank**	Flying Ranks
1 2nd Lieutenant	*Sergeant*
2 2nd Lieutenant	2nd Lieutenant
3 Lieutenant	Lieutenant
4 Lieutenant	Captain
5 Lieutenant	Major
6 Captain	

** British observers roll on a separate table: 1,2,3 *Sergeant,* 4,5 2nd Lieutenant, 6 Lieutenant

Austro-Hungarian

Starting Rank	Flying Ranks
1 *Feldwebel*	*Feldwebel/ Offizier Stellvertreter*
2 *Feldwebel*	
3 *Feldwebel**	Leutnant
4 Leutnant	Oberleutnant
5 Leutnant	Hauptmann
6 Leutnant	

* A second roll of one means the equivalent rank of *Offizier Stellvertreter.*

German

Starting Rank	Flying Ranks
1 *Unteroffizier*	*Unteroffizier*
2 *Vizefeldwebel*	*Vizefeldwebel/ Offizier Stellvertreter* (equal ranks)
3 *Vizefeldwebel**	
4 Leutnant	Leutnant
5 Leutnant	Oberleutnant
6 Leutnant	Hauptmann

* A second roll of one means the equivalent rank of *Offizier Stellvertreter.*

Rank has little effect in the game, except to mark achievement. British and German ranks, especially the distinction between enlisted men and officers, have a direct bearing on eligibility for certain awards.

Characters can be promoted after accumulating five kills. A roll of one or two on one die means the character has been promoted to the next higher rank. If the character is not promoted, he may try again after making five more kills, and may subtract one point from the die roll. The character gets one more try, and improves his chances by one point, for each additional five kills. On achieving a new rank, the player once again needs a roll of one or two to be promoted.

All rolls for promotion should be made in the open, usually at the end of the game session.

Pilots may not progress beyond the highest listed rank for their nationality.

Age

If a player wants to determine the age of a pilot for biographical purposes, a roll of two dice can be made on the following table to determine year of birth.

2	1888
3	1891
4	1893
5	1894
6	1895
7	1896
8	1897
9	1898
10	1892
11	1890
12	1889

Medals and Commendations

Pilots who compile successful service records eventually become eligible for medals and commendations. Each nationality has its own awards and honors to bestow on its most successful airmen.

Refer to Appendix I on page 33 for detailed information on the award procedures, then use these charts for reference.

Award	*Eligibility*	*Type (Category)*	*Number Presented*	Prerequisites	*Criteria*
American					
Distinguished Service Cross (D.S.C.)	All	Service	Common	12m/5k	Roll for 1, 2 upon reaching 12m/5k and after each additional 2m/1k
Congressional Medal of Honor (C.M.H.)	All	Bravery (C)	Extremely Rare (4)	6m	Only for most outstanding accomplishment or act of bravery; Roll 1, 2
French Croix de Guerre (C. de G.)	All	Service	Common	10m/4k	Roll for 1 upon reaching 10/4k and after each additional 2m/1k
French Legion d'Honneur (L. d'H.)	All	Bravery (B)	Uncommon	C. de G.	For outstanding accomplishment or act of bravery; Roll 1, 2, 3
Belgian					
Croix de Guerre	All	Service	Uncommon	10m/4k	Roll for 1, 2 upon reaching 10m/4k and after each additional 2m/1k
Order of Leopold	All	Bravery (A)	Uncommon	6m	For suitable accomplishment or act of bravery; Roll 1, 2, 3
British					
Military Cross (M.C.)	Officers, RFC (1917 only)	Bravery (A)	Common	12m/5k	For suitable accomplishment or act of bravery; Roll 1, 2, 3, 4
Military Medal (M.M.)	Enlisted, RFC or RNAS (1917 only)	Bravery (A)	Common	12m/5k	For suitable accomplishment or act of bravery; Roll 1, 2, 3, 4
Distinguished Service Cross (D.S.C.)	Officers, RNAS (1917 only)	Bravery (A)	Common	12m/5k	For suitable accomplishment or act of bravery; Roll 1, 2, 3, 4
Distinguished Flying Cross (D.F.C.)	Officers, RAF (1918)	Bravery (A)	Common	12m/5k	For suitable accomplishment or act of bravery; Roll 1, 2, 3, 4
Distinguished Flying Medal (D.F.M.)	Enlisted, RAF (1918)	Bravery (A)	Common	12m/5k	For suitable accomplishment or act of bravery; Roll 1, 2, 3, 4
Distinguished Service Order (D.S.O.)	Officers	Bravery (B)	Uncommon	Either M.C., D.S.C. or D.F.C.	For outstanding accomplishment or act of bravery; Roll 1, 2
Distinguished Conduct Medal (D.C.M.)	Enlisted, RFC (1917 only)	Bravery (B)	Uncommon	M.M.	For outstanding accomplishment or act of bravery; Roll 1, 2
Distinguished Service Medal (D.S.M.)	Enlisted, RNAS (1917 only)	Bravery (B)	Uncommon	M.M.	For outstanding accomplishment or act of bravery; Roll 1, 2
Victoria Cross (V.C.)	All	Bravery (C)	Rare	12m	Only for the most outstanding accomplishment or act of bravery; Roll 1, 2 (Roll 1, 2, 3 if ace with over 25k)
French					
Croix de Guerre (C. de G.)	All	Service	Common	10m/4k	Roll 1, 2 upon reaching 10m/4k and after each additional 2m/1k
Medaille Militaire (M.M.)	All	Bravery (A)	Common	6m	For suitable accomplishment or act of bravery; Roll 1, 2, 3
Legion d'Honneur (L. d'H.)	All	Bravery (B)	Uncommon	M.M.	For outstanding accomplishment or act of bravery; Roll 1, 2, 3
Italian					
Silver Medal of Military Valor	All	Bravery (A)	Common	6m	For suitable accomplishment or act of bravery; Roll 1, 2
Gold Medal of Military Valor	All	Bravery (B)	Uncommon	6m	For outstanding accomplishment or act of bravery; Roll 1, 2. If not awarded, Roll 1, 2 for Silver Medal instead.
Austro-Hungarian					
Military Merit Cross	All	Service	Common	12m/5k	Roll 1, 2 upon reaching 12m/5k and after each additional 2m/1k
Bronze/Silver/Gold Medal for Bravery	All	Bravery (A)	Uncommon (can be won multiple times)	6m	For suitable accomplishment or act of bravery, awarded by grade; select grade appropriate and roll: Bronze 1, 2, 3, 4; Silver 1, 2, 3; Gold 1, 2 — try next lower grade once if unsuccessful

Award	*Eligibility*	*Type Category*	*Number Presented*	*Prerequisites*	*Criteria*
German					
Knight's Cross of the Royal House Order of Hohenzollern (Prussian)*	Officers, All Germans	Service	Uncommon	12k (fighter pilots) 20m (others)	Roll for 1, 2 upon reaching 12k and after each additional k or set of kills, or others upon reaching 20m and after every 5m more
Military Merit Cross in Gold (Prussian)*	Enlisted, All Germans	Bravery (B)	Uncommon (69)	10k (fighter pilots) 12m/5k (others)	For outstanding accomplishment or act of bravery; Roll 1, 2
Orden Pour le Merite—"The Blue Max" (Prussian)*	Officers, All Germans	Service	Uncommon	20k and Knight's Cross Hohenzollern	Roll for 1, 2 upon reaching 20k and after each additional kill or set of kills; roll for 1 after every additional mission to actually take possession of it if successful.
Cross of a Holder with Swords to the Royal House Order of Hohenzollern (Prussian)*	Enlisted, All Germans	Service	Very Rare (10)	20k (fighter pilots) 36m (others)	Roll for 1, 2 upon reaching 20k or 36m and after every 3k or 6m
Military Merit Order With Swords (Bavarian)	Officers, Bavarian	Service	Common	12m/5k	Roll for 1, 2 upon reaching 12m/5k and after each additional 2m/1k
Military Merit Cross (Bavarian)	Enlisted, Bavarian	Service	Common	12m/5k	Roll for 1, 2 upon reaching 12m/5k and after each additional 2m/1k
Silver Bravery Medal (Bavarian)	Enlisted, Bavarian	Bravery (B)	Very Rare (9)	Military Merit Cross	For outstanding accomplishment or act of bravery; Roll 1, 2
Gold Bravery Medal (Bavarian)	Enlisted, Bavarian	Bravery	Extremely Rare (4)	Military Merit Cross	Only for the most outstanding accomplishment or act of bravery; Roll 1, 2. If not awarded, roll 1, 2 for Silver Bravery Medal instead.
Knight's Cross of the Military Order of Max Joseph (Bavarian)	Officers, Bavarian	Service	Very Rare (11)	20k	For outstanding service; upon reaching 20k and after every additional 2k roll for 1, 2. This award bestows nobility and the right to use "Ritter" and "von" with the name.
Albert Order (Saxon)	Officers, Saxon	Service	Common	12m/5k	Roll for 1, 2 upon reaching 12m/5k and after each additional 2m/1k
Merit Order (Saxon)	Officers, Saxon	Service	Uncommon	24m/10k	Roll for 1, 2 upon reaching 24m/10k and after each additional 2m/1k
Silver Medal of the Order (Saxon)	Enlisted, Saxon	Bravery (A)	Uncommon	6m	For suitable accomplishment or act of bravery; Roll 1, 2
Gold Medal of the Order (Saxon)	Enlisted, Saxon	Bravery (C)	Extremely Rare (3)	Silver Medal of the Order	Only for the most outstanding accomplishment or act of bravery; Roll 1, 2
Military Order of St. Heinrich (Saxon)	Officers, Saxon	Bravery (B)	Uncommon (105)	6m	For outstanding service; accomplishment or act of bravery, roll 1, 2
Military Merit Order (Wurttemberg)	Officers, Wurttemberg	Service	Common (184)	12m/5k	Roll for 1, 2 upon reaching 12m/5k and after each additional 2m/1k
Friedrich Order (Wurttemberg)	Officers, Wurttemberg	Service	Uncommon	24m/10k	Roll for 1, 2 upon reaching 12m/5k and after each additional 2m/1k
Order of the Wurttemberg Crown with Swords (Wurttemberg)	Officers, Wurttemberg	Service	Rare	20k	For outstanding service; upon reaching 20k and after every additional 2k, roll 1, 2
Silver Military Medal (Wurttemberg)	Enlisted, Wurttemberg	Bravery (A)	Uncommon	6m	For suitable accomplishment or act of bravery; Roll 1, 2
Gold Military Medal (Wurttemberg)	Officers and Enlisted, Wurttemberg	Bravery (B)	Uncommon (213)	6m	For outstanding accomplishment or act of bravery; Roll 1, 2
"Extra" Awards (Other German States)	Officers, All Germans	Service	Uncommon	Knight's Cross Hohenzollern	After winning the Knight's Cross of the Royal House Order of Hohenzollern, German officers can roll for a 1 after every additional 2k. If successful, roll again on subtable.

*These Prussian Awards are never given posthumously or to POW's.

"Extra" Awards Subtable

Roll two dice; if an award already received comes up again, or an award of the pilot's own nationality is indicated, no extra award is received.

2 War Merit Cross (Lippe)
3 War Merit Cross (Brunswick)
4 Merit Cross with Swords (Waldeck)
5 Order of the Lion of Zahringen (Baden)
6 Albert Order (Saxony)
7 Hanseatic Cross (Roll: 1, 2 Hamburg; 3, 4 Lubeck; 5, 6 Bremen)
8 Military Merit Order with Swords (Bavaria)
9 Friedrich Order (Wurttemberg)
10 Friedrich August Cross (Oldenburg)
11 Cross For Faithful Service (Schaumburg-Lippe)
12 Friedrich Cross (Anhalt)

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Pilot Names

Each rostered pilot should be given a name after completing his first mission. The name should reflect the flier's nationality.

Last names can be found in telephone directories, newspapers and, of course, the players' imaginations. To reflect the uniqueness of each pilot personality, the names of real people should never be used.

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German First Names

Abraham
Adalbert
Adolf
Albert
Albrecht
Alex
Alfons
Alfred
Aloys
Andreas
Anton
Arhim
Ari
Armin
Arno
Arnold
Aron
Arthur
August
Bartholomaus
Benjamin
Benno
Bernard
Berthold
Bolko
Bolter
Bruno
Charles
Christel
Christian
Claus
Cornell
David
Detlef
Dieter
Dietrich
Dirk
Domenick
Edgar
Edmund
Eduard
Edward
Edwin
Egon
Emil
Erich
Ernest
Ernst
Eugen
Ewald
Felix
Feliz
Florian
Frank
Frankkyl
Franz
Friederich
Fritz
Fryc
Gehard
Georg
George
Gerd
Gerhardt
Gerndt
Gernot
Gerold
Gershen
Ginutis
Gottfried
Gotthard
Gregor
Guenther
Gunnar
Gunther
Gustav
Hans
Hans-Jorg
Harald
Harold
Harry
Hartmuth
Hasso
Hedwig
Heiner
Heinrich
Heinz
Helmar
Helmut
Henry
Herbert
Hermann
Herwig
Horst
Horstmar
Hubert
Hugo
Ignati
Immanuel
Irving
Israel
Issak
Issie
Jack
Jacob
James
Joachim
Johann
Johannes
Jonas
Jorg
Josef
Joseph
Julius
Justus
Kalman
Karl
Karl-Heinz
Kaspar
Klaus
Kurt
Leo
Leonhard
Leopold
Lewis
Lothar
Ludwig
Manfred
Markus
Martin
Matteo
Matthias
Max
Maximillian
Melchior
Mendel
Moritz
Moses
Nandor
Norbert
Orlo
Oskar
Oswald
Othmar
Otto
Paul
Peter
Raimund
Rainer
Randolf
Raven
Ray
Reinhardt
Reinhold
Renatus
Richard
Robert
Roelfen
Roger
Roland
Rolf
Roman
Rouvin
Ruben
Rudolf
Rutbert
Saloman
Samuel
Sebastian
Sepp
Siegfried
Siegmund
Simon
Stefan
Theo
Theodor
Theobald
Theophilus
Thom
Thoman
Udo
Ulrich
Ute
Utz
Victor
Vitus
Walter
Werner
Wilfried
Wilhelm
Willi
Willibald
Wolfgang
Wolfram
Xavier
Zoli

French First Names

Adolphe
Alain
Albert
Alfred
Alphonse
Andre
Antoine
Armand
Arthur
Auguste
Benjamen
Benoit
Bernard
Bertrand
Charles
Christian
Claude
Clement
Daniel
Denis
Dominique
Edmond
Edouard
Emile
Etienne
Eugene
Felix
Fernand
Francois
Frederic
Gabriel
Gaston
Georges
Gerard
Gilbert
Gilles
Gregoire
Guilluame
Gustave
Guy
Hector
Henri
Herve
Horace
Hubert
Jacques
Jean
Jean-Charles
Jean-Claude
Jean-Jacques
Jean-Marc
Jean-Paul
Jean-Philippe
Jean-Pierre
Jerome
Joseph
Jules
Julien
Laurent
Leo
Leon
Louis
Lucien
Marc
Marcel
Martin
Maurice
Maxime
Michel
Nicolas
Oliver
Omer
Paul
Philippe
Pierre
Raoul
Raymond
Rene
Richard
Robert
Roger
Roland
Samuel
Serge
Simon
Theodore
Thomas
Victor
Vincent
Xavier
Yves

Italian First Names

Aldo
Alfonso
Alessandro
Andrea
Angelo
Antonio
Benedetto
Bernardo
Calogero
Carlo
Diego
Domenico
Donato
Egidio
Enrico
Enzo
Eugenio
Filepio
Flavia
Fortunato
Francesco
Fulco
Gandolfo
Gennard
Gioacchino
Giovanni
Giuseppe
Guido
Ignazio
Isidoro
Italo
Lappo
Leonardo
Lino
Lorenzo
Luciano
Luigi
Marcelo
Marco
Mario
Marziale
Matteo
Melchiore
Mentore
Michele
Nazareno
Oriano
Onofaio
Oronzo
Paolo
Pazquale
Pellagrino
Pietro
Pompilio
Raffaelli
Raimondo
Riccardo
Rocco
Romano
Ruggiero
Salvatore
Santo
Saverino
Sebastiano
Sigismundo
Silvano
Silvio
Tullio
Valentino
Vincenzo
Vito
Zelfiso

GAME SCENARIOS

DAWN PATROL™ players can creatre an unlimited number of situations using the Random Combat advanced rules or by devising their own scenarios. The following scenarios are for players who want a ready-made situation, but they are also good examples of how to set up your own game.

Some of the scenarios can include up to twelve players, but games with four to eight players usually are the most interesting and most easily managed. A game with four to eight experienced players should last from 45 to 90 minutes.

The movement order for all planes is rolled randomly for the first turn of each scenario, unless otherwise noted. Many of the scenarios suggest using certain advanced rules to make the scenario more realistic. Players using the basic game rules can ignore these suggestions.

Scenario A 1 player Oct. 1918

German: Roll one die to determine aircraft at 15,500 feet

1 = Fokker D VII (185)	4 = Siemens-Schuckert D IV
2 = Fokker D VII (185)	5 = Roland D VIb
3 = Fokker D VIII	6 = Pfalz D XII

Allied: Two D.H. 4 bombers at 14,700 ft., One D.H. 4 at 14,800 ft.
Wind: None Location: German Clouds: None

Situation: This is a special solitaire scenario. A German ace is stalking three American D.H. 4s returning from a high-level bombing mission. One has developed engine trouble, and the other two have fallen behind the main formation to escort it back to the Allied lines. The D.H. 4s are flying at 80 mph in a V formation, with the highest plane at the point.

The German player gets a surprise attack on the first turn, so he may attack any one of the bombers from any angle except head-on without being shot at. The German player gets ace advantages as described under Pilot Experience.

The bomber formation moves according to dice rolls. All three D.H. 4s move before the German each turn, and they will stay in formation for maximum protection, if possible. A plane will not be abandoned unless it is shot down or slowed to less than 60 mph.

The bomber formation's movement is determined by rolling one dice three times, once each for speed, direction and altitude change. The bombers always move west or southwest, toward the Allied lines. If the formation turns, the turn will be made in the first square it moves into. The bombers may adjust their formation to give themselves the best defensive position. If a plane is temporarily separated from the formation by an aileron jam or similar event, the player must use his own judgment to decide the D.H. 4s' actions.

Bomber Movement Table

Roll	Speed	Direction	Altitude
1	70 mph	straight	-1,000 ft.
2	70 mph	straight	-500 ft.
3	80 mph	turn	-200 ft.
4	80 mph	turn	no change
5	80 mph	straight	no change
6	80 mph	straight	+100 ft.

If a bomber is shot down, there is a 1/3 chance it was the one with engine trouble. If so, the remaining two can accelerate to their maximum speed for the rest of the scenario. If two D.H. 4s are shot down, the third will dive as far as it can and fly at maximum speed toward the lines.

The American pilots and observers will shoot whenever the German is within their range and field of fire, and always fire short bursts. If one gun jams, they will shoot with the other rather than try to clear the jam, if a shot is available.

The scenario can end at any time. The table below lists the percentage chances that the game will end on various turns. The player should roll at the start of each turn. If the listed percentage is rolled, the game ends at the end of the turn being played.

Random Scenario End

1st and 2nd turns	no roll
3rd and 4th turns	10%
5th and 6th turns	20%
7th to 11th turns	30%
12th turn	game ends automatically

At this stage of the war, both German pilots and aircraft were in short supply. The German plane must escape if the engine takes three or more hits, if any other section takes five or more hits or if the pilot suffers a wound other than no effect (NE).

The German player wins if he shoots down at least two D.H. 4s without being wounded (other than NE) or shot down, or if he shoots down one D.H. 4 without taking more than 12 hits in his own plane. The German player loses if he suffers a wound other than NE, if his plane is shot down or if it takes more than 12 hits without shooting down at least one D.H.4. Other results mean a draw.

Scenario B 2 players May 1918

German: One Fokker Dr I at 3,100 ft.
Allied: One Sopwith Camel (150) at 3,150 ft.
Wind: None Location: German Clouds: None

Situation: This one-on-one battle matches two of the most famous fighter aircraft of World War I against each other behind the German lines. Start the planes five squares apart and facing each other.

Scenario C 2 players Aug. 1918

German: One Fokker D VII (185) at 2,700 ft.
Allied: One Sopwith Dolphin at 2,700 ft.
Wind: None Location: Front Clouds: None

Situation: This duel above the Western Front at low altitude features two outstanding aircraft types. Start the planes five squares apart and facing each other.

Scenario D 3 players Feb. 1918

German: One Fokker Dr I at 2,400 ft., one balloon.
Allied: Two Hanriot HD-1s at 1,400 ft.
Wind: None Location: German
Clouds: 1-2 = 2,600′ - 3,000′; 3-4 = 3,900′ -4,300′; 5-6 = None

Situation: Two Belgian Hanriots attack an anchored German balloon, or drachen, defended by a Fokker triplane. The two Hanriots manage to approach the *drachen* before the German can interfere, so start the HD-1s 10 squares from the balloon and let them move first on turn one. The Fokker starts on the other side of the balloon, 12 squares away. The German player must determine the balloon's defenses and altitude by rolling on the appropriate random set-up tables.

Scenario E 3 players Feb. 1918

German: Two Albatros W.4s at 3,000 ft.
Allied: One R.E. 8 at 2,900 ft.
Wind: W 10 mph Location: At sea Clouds: None

Situation: Two roaming Albatros seaplanes have met an R.E. 8 on a test flight over the North Sea. The Albatroses are offshore and behind Allied lines when they encounter the solitary British plane.

The R.E. 8 is flown by one player acting as both pilot and observer. It is heading northwest. The W.4s approach from the west, eight squares away. The nearest land is 140 squares east (an area behind Allied lines). German lines are 260 squares northeast.

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If the seaplanes must land on the water, they will do so into the wind. If the wind is 10 mph or less, they suffer no penalties for rough seas. If a non-seaplane is forced to ditch on the water, it automatically crashes and *one* is subtracted from the roll to determine the type of crash. Since both sides patrol the Channel, anyone downed has a 40% chance of being rescued (60% if a friendly aircraft escapes and can pinpont the location). However, if a pilot is not rescued, he will either die from drowning or exposure or be captured by the enemy. The chance of death is 60% during the cold months, but only 25% during the warmer months (May-Aug.)

Scenario F 4 players April 1918

German: One Albatros D Va and one Pfalz D IIIa at 4,700 ft.
Allied: Two Nieuport 28s at 4,800 ft.
Wind: None Location: Allied Clouds: None

Situation: This is a re-creation of the historic air battle that resulted in the first two victories for the fledgling U.S. Air Service on April 14, 1918. Two American lieutenants of the 94th Aero Squadron, Douglas Campbell and Alan Winslow, responded to a sighting of two German fighters by taking off immediately and engaging them over the airfield in full view of the rest of the squadron. Both Campbell and Winslow were victorious and within minutes an Albatros and Pfalz had become the first kills of the American Air Service.

At the start, place the two pairs of aircraft nine squares apart with the Nieuports approaching from the side and slightly to the rear of the Germans.

Scenario G 4 players Oct. 1918

German: Two Fokker D VIIIs at 14,700 ft.
Allied: Two Sopwith Snipes at 14,750 ft.
Wind: W 10 mph Location: Front
Clouds: 1-2 = 3,600′ - 4,200′; 3-4 = 5,800′ -6,200′; 5-6 = None

Situation: This air battle occurs in the last weeks of the war and pits two of the finest aircraft types of the war against each other in a combat high over the front lines. To reflect a possible German ammunition shortage during the last month of the war, one German player should roll for the amount of ammunition available: 1 = 20 ammo points per gun (6 bursts); 2-3 = 30 ammo points per gun (nine bursts); 4-5 = 40 ammo points per gun (12 bursts); 6 = 50 ammo points per gun (15 bursts). Start the planes seven squares apart.

Scenario H 5 players Nov. 1917

German: Two Pfalz D IIIs at 1,050 ft.
Allied: Three D.H. 5s at 200 ft.
Wind: None Location: German
Clouds: 1-2 = 2,200′ - 2,700′; 3-4 = 4,200′ - 4,600′; 5-6 = None

Situation: Two Pfalzes are attacking three British D.H. 5s that have just dropped their bombs in a ground attack on German positions during the Battle of Cambrai. Start the British planes in a line with two squares between each. Start the Pfalzes five squares behind the last D. H. 5.

Scenario I 6 players June 1918

German: Two Hannover CL IIIas at 6,950 ft.
Allied: Two Nieuport 28s at 6,950 ft.
Wind: None Location: German
Clouds: 1-2 = 3,200′ - 3,600′; 3-4 = 9,500′ - 9,900′; 5-6 = None

Situation: There are four German players (two pilots, two observers) against two American players. The two American Nieuports are pitted against a pair of scrappy German two-seaters in a battle behind the German lines. The Americans have climbed in pursuit of the Hannovers, and the battle is joined just as they reach the Germans.

Place the oncoming Nieuports eight squares ahead of the Hannovers and slightly to their right. Both pairs of planes are flying wing tip-to-wing tip at the start of the game.

Scenario J 7 players Nov. 1917

Austrian: Two Albatros (Oeffag) D IIIs and One Aviatik (Berg) D I at 5,900 ft.
Italians: Four Hanriot HD-1s at 6,800 ft.
Wind: None Location: Front
Clouds: 1-2 = 1,700′ - 2,100′; 3-4 = 9,000′ - 9,400′; 5-6 = None

Situation: This battle on the Italian Front begins as four Italian fighters dive at three Austro-Hungarian planes that are climbing to meet them. Start the formations 10 squares apart and facing each other.

Scenario K 8 players Feb. 1918

German: Four Fokker Dr Is at 8,200 ft.
Allied: Four Sopwith Camels (150) at 8,200 ft.
Wind: None Location: Front Clouds: None

Situation: This is a straight-forward, evenly matched dogfight that can easily be played as a tournament game for eight players. Start the two groups of planes eight squares apart and facing each other. If the game is a tournament, limit the flying area for the first six turns of the game (the size of the regular board is good). Escapes are allowed only after the sixth turn.

Scenario L 8 players Sept. 1918

German: Two Fokker D VIIs (185) at 4,300 ft. and
Two Pfalz D XIIs at 5,200 ft.
Allied: Four Sopwith Dolphins at 4,350 ft.
Wind: None Location: Random Clouds: None

Situation: This is another simple four-on-four game, except that the Germans have two planes entering the battle slightly higher than the opposing formation. At the start, place the Fokkers and Sopwiths about 10 squares apart and facing each other. The Pfalzes are five squares behind the Fokkers.

Scenario M 4 to 12 players Sept. 1918

German: Fokker D VIIs (185) at 6,000 ft.
Allied: Sopwith Camels (130) at 5,800 ft.
Wind: None Location: German Clouds: None

Situation: On September 22, 1918, two flights of the American 17th Aero Squadron were jumped by a group of Fokker D VIIs from several different Jagdstaffels (fighter squadrons, also called jastas). A number of ace pilots were in the battle. American flight leader George Vaughn won the Distinguished Service Cross after his outstanding performance.

Use the pilots listed below to create your own scenario within this famous dogfight (the actual battle involved over 20 planes). Consult the Mission, Kills & Pilot Experience section for details, on ace pilot bonuses. All pilots are assumed to be on their 3rd-12th mission unless their kill scores indicate a higher category.

Germans, various jastas
- Leutnant Hermann Frommherz — Jasta 27, 19 kills
- Leutnant Friedrich Noltenius — Jasta 27, 12 kills
- Vizefeldwebel Christel Mesch — Jasta 36, 8 kills
- Leutnant Wilhelm Neuenhofen — Jasta 36, 7 kills
- Leutnant Karl Bauerfeind — Jasta 34b, 1 kill

Americans, 17th Aero Squadron
- Lieutenant George A. Vaughn — 7 kills
- Lieutenant Howard C. Knotts — 2 kills
- Lieutenant Frank A. Dixon — 2 kills
- Lieutenant Glenn D. Wicks — 2 kills
- Lieutenant William T. Clements — 1 kill
- Lieutenant Theose E. Tillinghast — 0 kills
- Lieutenant Gerald P. Thomas — 0 kills

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COMBAT TABLES

DAWN PATROL™ GAME

PERCENTILE TABLE

5%	11
10%	9
15%	6
20%	7, 12
25%	4, 7
30%	7,8
35%	2, 4, 5, 6
40%	5, 6, 8
45%	6, 7, 8
50%	4, 5, 6, 7
55%	5, 6, 7, 8
60%	3, 5, 6, 7, 8
65%	4, 5, 6, 7, 8
70%	3, 4, 5, 6, 7, 8
75%	all except 2, 3, 4, 10
80%	all except 2, 4, 10
85%	all except 3, 11, 12
90%	all except 9
95%	all except 11

RANGE TABLES

50-100′	1, 2, 3, 4, 5 hits
150-200′	1, 2, 3, 4 hits
250-300′	1, 2, 3 hits
350-400′	1, 2 hits
450-500′	1 hit

RANGE/FIREPOWER EFFECTIVENESS INDEX

Twin Guns Deck Mounted

	L	I	S
50-100′	K	K	J
150-200′	J	J	I
250-300′	J	I	H
350-400′	I	H	G
450-500′	H	G	F

Single Gun Deck Mounted

	L	I	S
50′-100′	G	G	F
150′-200′	F	F	E
250′-300′	F	E	D
350′-400′	E	D	C
450′-500′	D	C	B

Single Gun Wing Mounted

	L	I	S
50-100′	F	F	E
150-200′	E	E	D
250-300′	E	D	C
350-400′	D	C	B
450-500′	C	B	A

HIT TABLE

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	1	1	1	1	1	1	1	1	2	2	3	4	5
2	1	1	1	1	1	1	2	2	2	3	4	5	6
3	1	1	1	1	2	2	2	3	3	4	5	6	7
4	1	1	1	2	2	2	3	4	4	5	6	7	8
5	1	1	2	2	3	3	4	4	5	6	7	8	9
6	1	2	2	3	3	4	4	5	6	7	8	9	10

AMMUNITION EXPENDITURE

(per gun)

Short Burst	2 pts.
Interrupted Burst	3 pts.
Long Burst	4 pts.

GUN JAMMING CHANCES

(per gun)

First turn (guns cool)
Short or interrupted burst — 5%
Long burst — 10%

Following turns (guns heated)
No firing — -5% per turn until cool
Short burst — No percentage change
Interrupted or long burst — +5% per turn of successive firing

GUN JAM CLEARING CHANCES

(per gun)

Short Jam — 35% per turn
Interrupted Jam — 25% per turn
Long Jam — 15% per turn

(Subtract 5% for Lewis guns)

CRITICAL HIT CHANCES

hf taken

	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	75%
Engine	1		2			3				4			5
Other	2	3	4	5	6	7	8	9	10	11	12	13	

HIT LOCATION TABLE

Die Roll	Angle of Attack: Head-On	Side	Tail	Top	Bottom
1	RW	E	LW	E	E
2	CW*	FF**	LW	LW	RW
3	E	LW/RW	T†	CW**	FF**
4	E	RF†	CW**	RW	LW
5	E	RF	RW	RF†	RF†
6	LW	T	RW	T	T

* Probable pilot hit
** Possible pilot hit
† Possible observer hit if target is a two-seater aircraft

(Cut here into two sheets.)

SET UP TABLES

ALTITUDE LEVEL OF COMBAT & CLOUD LEVEL

1 or 2	Low
3 or 4	Medium (Add 6,000′ to starting altitude)
5 or 6	High (Add 12,000′ to starting altitude)

RANDOM DATE OF COMBAT

1/1 Feb 1917	1/6 Jul 1917	2/6 Dec 1917	4/4 May 1918
1/2 Mar 1917	2/2 Aug 1917	3/3 Jan 1918	4/5 Jun 1918
1/3 Apr 1917	2/3 Sep 1917	3/4 Feb 1918	4/6 Jul 1918
1/4 May 1917	2/4 Oct 1917	3/5 Mar 1918	5/5 Aug 1918
1/5 Jun 1917	2/5 Nov 1917	3/6 Apr 1918	5/6 Sep 1918
			6/6 Oct 1918

EXACT STARTING ALTITUDE

Roll once on each table below and add for exact starting altitude or lower bound of a cloud bank:

1	1,000′	and	1 100′
2	2,000′		2 200′
3	3,000′		3 300′
4	4,000′		4 400′
5	5,000′		5 500′
6	6,000′		6 600′

LOCATION OF COMBAT

1	On Allied side of the lines
2	Over the front lines
3	Over the front lines
4	On German side of the lines
5	On German side of the lines
6	On German side of the lines

GERMAN PARACHUTES

(Only available Mar 1918-end for Germans, Aug. 1918-end for Austro-Hugarians. Aces subtract one spot.)

1	Parachute carried
2	Parachute carried
3	Parachute not carried
4	Parachute not carried
5	Parachute not carried
6	Parachute not carried

CLOUD BANK THICKNESS

1	300 feet
2	400 feet
3	500 feet
4	600 feet
5	700 feet
6	800 feet

NUMBER OF CLOUD BANKS

1	1 bank
2	1 bank
3	2 banks
4	3 banks
5	No clouds
6	No clouds

BALLOON DEFENSES

Germans also roll for flaming onions:

1	2 AA, 5 MG	1	2 onions
2	2 AA, 6 MG	2	2 onions
3	3 AA, 5 MG	3	1 onion
4	3 AA, 4 MG	4	1 onion
5	4 AA, 4 MG	5	1 onion
6	4 AA, 5 MG	6	No onions

WIND DIRECTION

2	E	8	W
3	N	9	SW
4	NE	10	SE
5	NW	11	S
6	W	12	E
7	W		

WIND SPEED

1	Calm
2	Negligible breeze
3	Light wind of 10 mph
4	Light wind of 10 mph
5	Medium wind of 20 mph
6	Strong wind of 20/30 mph

To determine the height of a balloon, roll on the "Cloud Bank Thickness" table for its exact starting altitude.

DAWN PATROL™

WWI Aerial Combat Game

Critical Hit Tables

	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	75%
Engine	1		2			3				4			5
Other	2	3	4	5	6	7	8	9	10	11	12	13	

ENGINE

2 Engine explodes — aircraft shot down, destroyed
3* Engine on fire — engine running, but on fire
4 Fuel line hit — engine quits; must glide to landing
5* Intake manifold hit — cut top and turn speed by 20 mph and climb to 100′ maximum
6* Carburetor hit — no effect
7* Carburetor hit — cut top and turn speed by 10 mph and climb by 50′
8 Intake manifold hit — cut top and turn speed by 10 mph and climb by 50′
9* Mechanism hit — cut top speed to turn speed and climb by 50′
10* Oil leak — engine may seize if serious; roll one die: on 1, 2, 3 or 4 engine quits after that number of turns, on 5 or 6 no effect
11 Propeller or prop shaft hit — engine unbalanced; must cut to low throttle and glide to landing
12 Compression loss — cut top speed to basic turn speed (the start at game turn speed unadjusted by critical hits) and cut climb by 100′. Above 9,950′, further reduce top speed and turn speed by 10 mph and climb by 50′ more

* The aircraft is trailing smoke. Smoke is visible to all players. For the rest of the game the pilot must add 100 feet to the range of all his shots, both to hit and for effect. Observers are not affected.

FORWARD FUSELAGE

2 Controls destroyed — shot down out of control
3 Ammo belt cut — one ammo belt is cut, reducing ammo supply for that gun; roll one die for number of bursts remaining, or double one die for number of ammo points remaining
4 Landing gear damaged — subtract 20% from landing chance
5 Aileron cables hit — cut turn speed by 30 mph; no banks, sideslips, or fancy maneuvers possible
6 Guns hit — roll die to see if one or both guns are out of action: 1, 2, or 3 one gun ruined, 4, 5, 6 both guns ruined
7 Fuel tank hit — danger of fire or explosion, roll one die: 1 = engine explodes, 2 or 3 = engine running but on fire, 4-6 = tank leaking fuel. If the engine did not explode, roll one die; the engine will quit after that many turns, due to fuel leakage. There is a 30% chance the engine will explode if the guns are fired while fuel is leaking
8 Rudder cables hit — cut turn speed by 20 mph; no banks, sideslips, or fancy maneuvers possible
9 Elevator cables hit — no fancy maneuvers and no climbing possible; dive limited to no more than 1,000′ per turn
10 Fuel tank hit — same as #7
11 Tire hit and deflated — subtract 10% from landing chance
12 Controls jammed — must fly straight with no gain or loss of altitude until unjammed (at least one turn). Roll one die at the end of every turn: 1, 2, or 3 means problem corrected

TAIL

2 Tail skid damaged — subtract 10% from landing chance
3 Controls jammed — same as Forward Fuselage #12
4 Controls jammed — same as Forward Fuselage #12, except plane must circle; roll die: 1-3 = left, 4-6 = right.
5 Stabilizer damaged — cut dive by 100′
6 Rudder hit — same as Forward Fuselage #8
7 Elevator hit — same as Forward Fuselage #9
8 Stabilizer damaged — cut dive by 200′
9 Tail structure damaged — cut climb by 100′, dive by 300′, turn speed by 10 mph, add one more hit to damage taken
10 Rudder hit — cut turn speed by 10 mph
11 Elevator hit — cut climb by 100′, cut dive by 200′
12 Tail skid structure damage — same as #2

WING (RIGHT OR LEFT)

2 Aileron cables hit — same as Forward Fuselage #5
3 Aileron jammed — must bank right or left (roll die) with no gain or loss of altitude, until unjammed (at least one turn). Roll one die at the end of every turn: 1, 2, or 3 means the problem is corrected
4 Aileron hit — cut turn speed by 10 mph
5 Strut hit — cut climb by 100′, dive by 600′, turn speed by 10 mph, no fancy maneuvers possible, add two more hits to damage taken
6 Wing structure damaged — cut dive by 100′
7 Aileron hit — cut turn speed by 10 mph, no opposite turns or banks permitted (if left wing, no right turns or banks, and vice versa).
8 Aileron hit — no opposite turns or banks permitted
9 Wing structure damaged — cut dive by 200′
10 Strut hit — cut climb by 50′, dive by 400′, no fancy maneuvers possible, add one more hit to damage taken
11 Wing spar hit — cut dive by 100′, add two more hits to damage taken
12 Aileron hit — cut turn speed by 10 mph

CENTER WING

Although critical hits are not possible in the center wing, there is a chance that hits in the center wing can damage wing-mounted guns. Roll for CW critical hits using the normal procedure. If a critical hit results, roll two dice — if a 5 is rolled, the ammo drum is hit and destroyed and must be replaced; if a 6 or 7 is rolled, the wing gun is ruined. Other rolls have no effect.

REAR FUSELAGE

Although critical hits are not possible in the rear fuselage, there is a chance that hits in the rear fuselage can damage rear guns. Roll for RF critical hits using the normal procedure. If a critical hit results, roll two dice — if a 5 is rolled, the ammo drum is hit and destroyed and must be replaced (only one drum must be replaced on a twin-gun mount); if a 6 or 7 is rolled, the gun is hit and ruined (there is a 50% chance only one gun of a twin-gun mount will be destroyed). Other rolls have no effect.

Allied Fighter Random Aircraft Chart

DAWN PATROL™ GAME

	1917											1918									
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
De Havilland D.H.5					4,5,6	4,5,6	1,2,3	1,2,3	1	1	1	1									
					1	1	1	1	1,2	1,2	1,2	1,2									
Hanriot HD -1							1,2,3	1,2,3	2,3	2,3	2,3	2,3	1,2	1,2	1	1	1	1	1	1	1
							2	2	1,2	1,2	1,2	1	1	1	1	1	1	1	1	1	1
Morane-Saulnier AI													5,6	5,6	5,6	5,6					
													1	1	1	1					
Nieuport 17*	1,2	1,2	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	2,3	2,3	2,3	1	3,4								
			1,2,3	1,2,3	1,2,3	1,2	3,4	3,4	3,4	3,4	3,4	3,4	1								
Nieuport 28															5,6	5,6	1	5,6	5,6		
															2	2	2,3	1,2	1,2		
S.E.5				4,5,6	4,5,6	1,2,3	4,5,6	4,5,6	2,3	2,3	2,3										
				1,2	2,3	3,4	1	1	5,6	5,6	5,6										
S.E.5a						4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	3,4	3,4	2,3,4	2,3,4	2,3,4	2,3,4	2,3,4	2,3,4	2,3,4
						2	2	2	1,2	1,2,3	1,2	1,2,3	2-5	1-4	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2
Sopwith Camel (130)*						4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	2,3	1,2	1,2	2,3,4	2,3,4	5,6	5,6	5,6	5,6	2,3,4
						3	3,4	3,4	3,4	4,5	3,4	2-5	2-5	2-5	4,5,6	4,5,6	1-4	3-6	3-6	1-4	3,4
Sopwith Camel (150)									1	1	1	1	3,4	3,4	1	1	1	1	1	5,6	2,3,4
									3	3	3	5,6	6	5,6	2,3,4	2,3,4	4,5,6	2,3,4	2,3,4	5,6	5,6
Sopwith Dolphin												2,3	1,2	1,2	1	1	5,6	1	1	1	1
												6	6	6	5,6	5,6	5,6	5,6	5,6	2-6	2-6
Sopwith Pup	3,4	3,4	4,5,6	4,5,6	4,5,6	4,5,6	1,2,3	1,2,3	1	1	1										
			1-4	3,4	4	4	5	5	4	4	4										
Sopwith Snipe																					5,6
																					1,2
Sopwith Triplane			4,5,6	4,5,6	4,5,6	4,5,6	1,2,3	1,2,3	1												
			5,6	5,6	5,6	5,6	6	6	5												
S.P.A.D. VII*	5,6	5,6	1,2,3	1,2,3	1,2,3	1,2,3	4,5,6	4,5,6	4,5,6	1	1										
			4,5,6	4,5,6	4,5,6	5,6	5,6	5,6	5,6	5,6	5,6										
S.P.A.D. XIII*									1	4,5,6	4,5,6	4,5,6	5,6	5,6	5,6	5,6	2,3,4	2,3,4	2,3,4	2,3,4	5,6
									6	6	5,6	4,5,6	2-6	2-6	3-6	3-6	4,5,6	4,5,6	4,5,6	4,5,6	3-6

Allied aircraft in flights are always of the same type.

* Indicates nationality roll (below).

Nieuport 17

	Feb-Jul 1917	Aug 1917-Feb 1918
1	French	French
2	French	French
3	French	French
4	British	French
5	British	French
6	Belgian	Belgian

Sopwith Camel (130)

	Aug-Oct 1918
1	British
2	British
3	British
4	British
5	British
6	American

S.P.A.D. VII

	Feb-Jul 1917	Aug-Oct 1917	Nov-Dec 1917
1	French	French	French
2	French	French	French
3	French	French	French
4	British	French	French
5	British	British	French
6	Belgian	Belgian	Belgian

S.P.A.D. XIII

	July 1918	Aug-Oct 1918
1	French	French
2	French	French
3	French	French
4	French	American
5	American	American
6	American	American

Allied Two-Seater Random Aircraft Chart (By Nationality)

DAWN PATROL™ GAME

		1917											1918									
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
AMERICAN	Breguet 14																		1,2	1,2	1	1
	American D.H.4																			3,4	2,3,4	2,3,4
	Salmson 2A.2																		3-6	5,6	5,6	5,6
BRITISH	Armstrong-Whit F.K.8			1	1	1	1	1	1	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3
								1,2,3	1,2,3	1	1	1	1	1	1	1	1	1	1	1	1	1
	Bristol F.2B					2	2	2,3	2,3	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6
										1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3
	D.H.4			2	2	3	3	4	4	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6
										4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6	4
	D.H.9															1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3
																2	2,3	2,3	2,3,4	2,3,4	2,3,4	2,3,4
	D.H.9A																					4,5,6
																						5,6
	R.E.8	1,2,3	1,2,3	3,4,5	3,4,5	4,5	4,5	5,6	5,6	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3
										2-6	2-6	2-6	2-6	2-6	2-6	3-6	4,5,6	4,5,6	5,6	5,6	5,6	5,6
	Sopwith 1½ Strutter	4,5,6	4,5,6	6	6	6	6	1	1													
								4,5,6	4,5,6													
FRENCH	Breguet 14						1	1	1	1,2	1,2	1,2	1,2	1,2	1,2	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3
	Dorand AR.2					1,2,3	2,3	2,3	2,3	3	3	3	3	3								
	Salmson 2A.2													4	3,4	4,5	4,5	4,5	4,5	4,5,6	4,5,6	4,5,6
	Sopwith 1½ Strutter			1-6	1-6	4,5,6	4,5,6	4,5	4,5	4,5	4	4	4	5	5							
	S.P.A.D. XI							6	6	6	5,6	5,6	5,6	6	6	6	6	6	6			

German Fighter Random Aircraft Chart

DAWN PATROL™ GAME

	1917											1918									
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Albatros D II	1,2,3	1,2	1,2	1	1	1	1														
		1,2,3	1,2	1,2	1,2	1,2	1,2														
Albatros D III	4,5	3-6	3-6	2-6	2-5	2,3,4	2,3,4	1,2,3	1,2,3	1,2,3	1-4	1-4	1-4	1,2	1	1	1	1	1	1	
										1-4	1,2	1,2	1,2	1,2,3	1,2,3	1,2,3	1,2,3	1,2	1	1	
Albatros D V					6	5,6	5,6	4,5	4,5	4,5,6	1-4	1-4	5,6	1,2	1	1	1	1	1		
										1-5	3,4	3,4	1,2	4,5,6	4,5,6	4,5,6	4,5,6	3,4	2		
Albatros D Va										4,5,6	5,6	5,6	1-4	3,4	2,3,4	2,3,4	2,3,4	2,3	2,3	1	1
										6	1,2	1,2	3,4	1-4	1-4	1,2,3	1,2,3	1,2,3	1,2	2	1
Fokker Dr I											5,6	5,6	5,6	3,4	2,3,4	5,6	5,6	4,5,6	1	1	1
											3,4	3,4	3,4	5,6	5,6	1,2,3	1,2	1	3,4	3	2
Fokker D VII (160)																5,6	2,3,4	4,5,6	4,5,6	2-5	2-5
																4,5,6	4,5,6	2,3,4	1,2,3	1,2	1
Fokker D VII (185)																		4,5,6	4,5,6	2-5	2-5
																		5,6	4,5,6	3-6	2-6
Fokker D VIII																					6
																					1,2
Pfalz D III								6	6	1,2,3	1-4	1-4	5,6	5,6							
										5,6	5,6	5,6	5,6	1,2							
Pfalz D IIIa											5,6	5,6	1-4	5,6	5,6	2,3,4	5,6	2,3	2,3	6	1
											5,6	5,6	5,6	3-6		4,5,6	3-6	4,5,6	3,4	1	3
Pfalz D XII																			2,3	1	1
																			5	4,5,6	4,5,6
Roland D IIa (vs French; otherwise Alb D III)	6	1,2	1,2	1	1	1	1														
		4,5,6	3-6	3-6	3-6	3-6	3-6														
Roland D VIb																		1	1	6	6
																		5,6	5,6	2,3,4	3,4
Siemens-Schuckert D IV																			2,3	6	6
																			6	5,6	5,6

Initial roll: 1 or 2, all aircraft in flight are of same type; otherwise each pilot rolls individually.

German Two-Seater Random Aircraft Chart

DAWN PATROL™ GAME

	1917											1918									
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
A.E.G. C IV	1,2	1,2	1,2	1,2	1	1	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1	1	1		
	1,2	1,2	1,2	1,2			1,2	1,2	1	1	1	1	1	1	1	1	1	1	1		
Albatros C VII	3-6	3-6	3-6	3-6	2	2	3	1,2	1,2	1,2	1,2										
	1,2	1,2	1,2	1,2				3,4	2,3	2,3	2										
Albatros C X								1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1	1			
								5,6	4,5,6	4,5,6	3-6	2-6	2-6	2,3,4	2,3	2	2,3	2,3			
Albatros C XII														1,2	1,2	1,2	2,3,4	2,3,4	1	1,2	1,2
														5,6	4,5	3,4	1	1	2-6	1,2,3	1,2,3
D.F.W. C V	3-6	3-6	3-6	3-6	3,4,5	3,4,5	4,5,6	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4	2,3,4	2,3,4	2,3,4	1,2	1,2
	3,4	3,4	3,4	3,4										1,2	1,2	1,2	2,3	2,3	1,2	4,5,6	4,5,6
Halberstadt CL II							1,2	5,6	5,6	5,6	5,6	5,6	5,6	5,6	5,6	5,6	1	1			
							3,4	1,2	1,2	1,2	1,2	1,2	1,2	1,2,3	1,2,3	1,2	4,5,6	4,5,6			
Halberstadt CL IV														5,6	5,6	5,6	5,6	5,6	5,6	3,4	3,4
														4,5,6	4,5,6	3,4	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3
Hannover CL IIIa																5,6	5,6	5,6	5,6	3,4	3,4
																5,6	4,5,6	4,5,6	4,5,6	4,5,6	4,5,6
L.V.G. C V								5.6	5,6	5,6	5,6	5,6	5,6	3,4	3,4	3,4	2,3,4	2,3,4	2,3,4	5,6	5,6
								3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4	4	4	3	1	1
L.V.G. C VI															1,2	1,2	2,3,4	2,3,4	2,3,4	5,6	5,6
															6	5,6	5	5	4,5	2,3,4	2,3,4
Roland C II	1,2	1,2	1,2	1,2																	
	3-6	3-6	3-6	3-6																	
Rumpler C IV	3-6	3-6	3-6	3-6	6	6	1,2	5,6	5,6	5,6	5,6	5,6	5,6	3,4	3,4	3,4	2,3,4	2,3,4	2,3,4	5,6	5,6
	5,6	5,6	5,6	5,6			5,6	5,6	5,6	5,6	5,6	5,6	5,6	5,6	5,6	5,6	6	6	6	5,6	5,6

DAWN PATROL™

Aircraft Mission Log

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Aircraft: **Pilot:**

Mission: **Location:** **Date:**

Altitude & Shooting Record

Die Roll	Altitude	Throttle	Burst/Attack/Result

Performance Specifications

	Top	Turn	Climb
to 4950	_____	_____	_____
5000-9950	_____	_____	_____
10,000-14,950	_____	_____	_____
15,000-up	_____	_____	_____

Dive _____

Ceiling _____

Weather Conditions

Wind:

Clouds:

Ammunition Supply

Damage Taken

E FF RF T LW CW RW

(Cut here into two sheets.)

DAWN PATROL™

AIRCRAFT SPECIFICATIONS CARDS

(cut into two sheets, not individually)

Armstrong-Whitworth F.K. 8

160 hp Beardmore — Apr 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	100	80	150
5,000-9,950	90	70	100
10,000-14,950	90	60	50

Maximum Dive: 1,400 ft. Ceiling: 13,000 ft.

One ff Vickers + One flx Lewis
Two seat obs, recon, ground attack*
British

E	FF	RF	T	LW	CW	RW
6	11	15	11	11	11	11

Breguet 14

300 hp Renault — Jul 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	80	300
5,000-9,950	100	80	250
10,000-14,950	90	70	200
15,000-up	80	60	100

Maximum Dive: 1,400 ft. Ceiling: 19,600 ft.

One ff Vickers + One or two flx Lewis
Two seat bombing, recon*
French, Belgian, American

E	FF	RF	T	LW	CW	RW
7	12	16	12	13	13	13

Bristol F. 2B

190 hp Rolls Royce Falcon — Jun 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	90	300
5,000-9,950	100	80	250
10,000-14,950	90	70	200
15,000-up	90	70	100

Maximum Dive: 1,500 ft. Ceiling: 20,000 ft.

One ff Vickers + One or two flx Lewis
Two seat fighter, ground attack, recon
British

E	FF	RF	T	LW	CW	RW
6	11	16	11	12	12	12

American D.H. 4

400 hp Liberty — Aug 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	120	90	250
5,000-9,950	110	80	200
10,000-14,950	110	80	150
15,000-up	100	70	100

Maximum Dive: 1,400 ft. Ceiling: 15,800 ft.

Two ff Marlin + Two flx Lewis
Two seat bombing, obs, recon*
American

E	FF	RF	T	LW	CW	RW
7	11	16	11	12	12	12

De Havilland 4

250 hp Rolls Royce — Apr 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	120	80	250
5,000-9,950	110	80	200
10,000-14,950	100	70	100
15,000-up	90	60	50

Maximum Dive: 1,400 ft. Ceiling: 16,000 ft.

One ff Vickers + One or two flx Lewis
Two seat bombing, recon*
British

E	FF	RF	T	LW	CW	RW
6	11	16	11	12	12	12

De Havilland 5

110 hp Le Rhone — Jun 17-Jan 18

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	90	300
5,000-9,950	100	80	200
10,000-14,950	90	70	100
15,000-up	80	60	50

Maximum Dive: 1,550 ft. Ceiling: 16,000 ft.

One ff Vickers
Single seat fighter, ground attack
British

E	FF	RF	T	LW	CW	RW
6	10	15	10	11	11	11

De Havilland 9

230 hp BHP/Siddeley Puma — Apr 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	120	90	250
5,000-9,950	110	80	200
10,000-14,950	100	80	100
15,000-up	90	70	50

Maximum Dive: 1,400 ft. Ceiling: 15,500 ft.

One ff Vickers + One or two flx Lewis
Two seat bombing, recon*
British

E	FF	RF	T	LW	CW	RW
6	11	16	11	12	12	12

De Havilland 9A

400 hp Liberty — Oct 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	120	90	300
5,000-9,950	120	80	250
10,000-14,950	110	80	150
15,000-up	100	70	100

Maximum Dive: 1,400 ft. Ceiling: 16,750 ft.

One ff Vickers + Two flx Lewis
Two seat bombing*
British

E	FF	RF	T	LW	CW	RW
7	11	16	11	12	12	12

Dorand AR.2

200 hp Renault — Jun 17-Feb 18

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	100	80	250
5,000-9,950	90	70	150
10,000-14,950	80	70	100
15,000-up	80	60	50

Maximum Dive: 1,400 ft. Ceiling: 16,500 ft.

One ff Vickers + One or two flx Lewis
Two seat obs, recon, bombing*
French

E	FF	RF	T	LW	CW	RW
6	11	15	11	11	11	11

Hanriot HD-1

110 hp Le Rhone — Aug 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	100	350
5,000-9,950	100	90	300
10,000-14,950	90	80	200
15,000-up	80	70	150

Maximum Dive: 1,500 ft. Ceiling: 21,000 ft.

One ff Vickers
Single seat fighter
Italian, Belgian

E	FF	RF	T	LW	CW	RW
6	10	15	10	11	11	11

Morane-Saulnier AI

160 hp Gnome Monosoupape — Feb-May 18

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	130	100	450
5,000-9,950	130	90	350
10,000-14,950	120	80	250
15,000-up	110	80	150

Maximum Dive: 1,500 ft. Ceiling: 23,000 ft.

Two ff Vickers
Single seat fighter
French

E	FF	RF	T	LW	CW	RW
6	11	15	11	11	11	11

Nieuport 17

110 hp Le Rhone — May 16-Feb 18

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	100	100	400
5,000-9,950	100	90	350
10,000-14,950	90	80	300
15,000-up	80	70	200

Maximum Dive: 1,350 ft. Ceiling: 17,500 ft.

One ff Vickers or one ff wing Lewis or both
Single seat fighter
French, British, Italian, Belgian

E	FF	RF	T	LW	CW	RW
6	10	14	10	10	10	10

Nieuport 28

160 hp Gnome Monosoupape — Apr-Aug 18

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	130	100	350
5,000-9,950	120	100	300
10,000-14,950	120	90	250
15,000-up	110	80	200

Maximum Dive: 1,400 ft. Ceiling: 19,000 ft.

Two ff Vickers
Single seat fighter
American

E	FF	RF	T	LW	CW	RW
6	11	15	11	11	11	11

Pomilio PE

260 hp Fiat — Feb 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	80	250
5,000-9,950	100	80	200
10,000-14,950	90	70	150
15,000-up	80	60	100

Maximum Dive: 1,400 ft. Ceiling: 16,400 ft.

One ff Vickers + One flx Lewis
Two seat recon, obs*

E	FF	RF	T	LW	CW	RW
6	11	15	11	11	11	11

R.A.F. R.E. 8

150 hp R.A.F. — Dec 16-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	100	80	200
5,000-9,950	90	70	100
10,000-14,950	80	60	50

Maximum Dive: 1,200 ft. Ceiling: 13,500 ft.

One ff Vickers + One flx Lewis
Two seat obs, recon, ground attack*
British, Belgian

E	FF	RF	T	LW	CW	RW
6	10	14	10	10	10	10

Salmson 2A.2

260 hp Canton-Unne — Feb 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	80	300
5,000-9,950	110	80	250
10,000-14,950	100	70	150
15,000-up	90	70	100

Maximum Dive: 1,400 ft. Ceiling: 20,500 ft.

One ff Vickers or two ff Marlin + Two flx Lewis
Two seat recon, ground attack*
French, American

E	FF	RF	T	LW	CW	RW
6	12	16	12	13	13	13

S.A.M.L. 2

260 hp Fiat — Aug 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	100	80	200
5,000-9,950	90	70	150
10,000-14,950	80	70	100
15,000-up	70	60	50

Maximum Dive: 1,400 ft. Ceiling: 16,400 ft.

One ff wing Revelli + One flx Revelli
Two seat obs, recon, ground attack*
Italian

E	FF	RF	T	LW	CW	RW
6	11	16	11	12	12	12

R.A.F. S.E. 5

150 hp Hispano-Suiza — May 17-Dec 17

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	120	90	300
5,000-9,950	110	80	200
10,000-14,950	110	70	100
15,000-up	100	70	50

Maximum Dive: 1,500 ft. Ceiling: 17,000 ft.

One ff Vickers + One ff wing Lewis
Single seat fighter, ground attack
British

E	FF	RF	T	LW	CW	RW
6	11	16	12	12	12	12

R.A.F. S.E. 5a

200 hp Hispano-Suiza — Jul 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	130	100	350
5,000-9,950	120	90	250
10,000-14,950	120	80	200
15,000-up	110	70	150

Maximum Dive: 1,500 ft. Ceiling: 22,000 ft.

One ff Vickers + One ff wing Lewis
Single seat fighter, ground attack
British

E	FF	RF	T	LW	CW	RW
6	11	16	12	12	12	12

Sopwith F.1 Camel

130 hp Clerget — Jul 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	100	350
5,000-9,950	100	100	250
10,000-14,950	100	90	150
15,000-up	90	80	100

Maximum Dive: 1,500 ft. Ceiling: 19,000 ft.

Two ff Vickers
Single seat fighter, ground attack
British, American

E	FF	RF	T	LW	CW	RW
6	11	15	11	12	12	12

Sopwith F.1 Camel

150 hp Bentley Rotary 1 — Oct 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	120	110	400
5,000-9,950	110	110	350
10,000-14,950	110	100	250
15,000-up	100	90	200

Maximum Dive: 1,500 ft. Ceiling: 22,000 ft.

Two ff Vickers
Single seat fighter, ground attack
British

E	FF	RF	T	LW	CW	RW
6	11	15	11	12	12	12

Sopwith 5F.1 Dolphin

200 hp Hispano-Suiza — Jan 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	130	100	400
5,000-9,950	120	90	300
10,000-14,950	120	90	250
15,000-up	110	80	150

Maximum Dive: 1,500 ft. Ceiling: 21,000 ft.

Two ff Vickers + One or two ff flx Lewis
Single seat fighter, ground attack
British

E	FF	RF	T	LW	CW	RW
6	11	15	12	12	12	12

Sopwith Pup

80 hp Le Rhone — Nov 16-Dec 17

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	100	250
5,000-9,950	100	90	200
10,000-14,950	90	80	150
15,000-up	90	80	100

Maximum Dive: 1,500 ft. Ceiling: 17,500 ft.

One ff Vickers
Single seat fighter, ground attack
British

E	FF	RF	T	LW	CW	RW
6	10	14	10	11	11	11

Sopwith 7F. 1 Snipe

230 hp Bentley Rotary 2 — Oct 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	120	110	350
5,000-9,950	120	110	300
10,000-14,950	110	100	250
15,000-up	110	100	200

Maximum Dive: 1,500 ft. Ceiling: 19,500 ft.

Two ff Vickers
Single seat fighter, ground attack
British

E	FF	RF	T	LW	CW	RW
6	11	15	11	12	12	12

Sopwith 1½ Strutter

130 hp Clerget — Jul 16-Mar 18

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	100	70	250
5,000-9,950	90	70	150
10,000-14,950	80	60	100
15,000-up	70	60	50

Maximum Dive: 1,400 ft. Ceiling: 15,500 ft.

One ff Vickers + One flx Lewis
Single or two seat bombing, recon, ground attack
British, French, Belgian

E	FF	RF	T	LW	CW	RW
6	10	15	10	10	10	10

Sopwith Triplane

130 hp Clerget — Apr 17-Oct 17

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	100	350
5,000-9,950	110	90	300
10,000-14,950	100	80	200
15,000-up	90	70	150

Maximum Dive: 1,450 ft. Ceiling: 20,500 ft.

One ff Vickers
Single seat fighter
British

E	FF	RF	T	LW	CW	RW
6	10	15	10	11	11	11

S.P.A.D. VII

180 hp Hispano-Suiza — Oct 16-Dec 17

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	120	90	300
5,000-9,950	110	80	250
10,000-14,950	110	70	200
15,000-up	100	60	100

Maximum Dive: 1,550 ft. Ceiling: 18,000 ft.

One ff Vickers
Single seat fighter
French, British, Italian, Belgian

E	FF	RF	T	LW	CW	RW
6	11	16	12	12	12	12

S.P.A.D. XI

215 hp Hispano-Suiza — Aug 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	80	300
5,000-9,950	110	70	200
10,000-14,950	100	70	150
15,000-up	100	60	100

Maximum Dive: 1,400 ft. Ceiling: 23,000 ft.

One ff Vickers + One or two flx Lewis
Two seat obs, recon, bombing*
French, Belgian

E	FF	RF	T	LW	CW	RW
6	12	16	12	12	12	12

S.P.A.D. XIII

220 hp Hispano-Suiza — Oct 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	130	100	400
5,000-9,950	120	90	300
10,000-14,950	120	80	250
15,000-up	110	70	150

Maximum Dive: 1,600 ft. Ceiling: 22,300 ft.

Two ff Vickers
Single seat fighter
French, American, Italian, Belgian

E	FF	RF	T	LW	CW	RW
6	11	16	12	12	12	12

A.E.G. C IV

160 hp Mercedes — May 16-Aug 18

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	100	70	200
5,000-9,950	90	70	150
10,000-14,950	80	60	100
15,000-up	70	60	50

Maximum Dive: 1,400 ft. Ceiling: 16,400 ft.

One ff Spandau + One flx Parabellum
Two seat recon, obs, ground attack*
German, Turkish, Bulgarian

E	FF	RF	T	LW	CW	RW
6	11	15	11	11	11	11

Albatros C VII

200 hp Benz — Dec 16-Dec 17

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	100	70	200
5,000-9,950	90	70	150
10,000-14,950	90	60	100
15,000-up	80	60	50

Maximum Dive: 1,400 ft. Ceiling: 16,400 ft.

One ff Spandau + One flx Parabellum
Two seat obs, recon*
German

E	FF	RF	T	LW	CW	RW
6	10	15	10	11	11	11

Albatros C X

260 hp Mercedes — Sep 17-Jul 18

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	80	200
5,000-9,950	100	70	150
10,000-14,950	100	70	100
15,000-up	90	60	50

Maximum Dive: 1,400 ft. Ceiling: 16,400 ft.

One ff Spandau + One flx Parabellum
Two seat obs, recon*
German

E	FF	RF	T	LW	CW	RW
6	11	15	11	12	12	12

Albatros C XII

260 hp Mercedes — Mar 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	80	250
5,000-9,950	110	80	200
10,000-14,950	100	70	150
15,000-up	90	60	100

Maximum Dive: 1,400 ft. Ceiling: 18,500 ft.

One ff Spandau + One flx Parabellum
Two seat obs, recon*
German

E	FF	RF	T	LW	CW	RW
6	11	15	11	12	12	12

Albatros D II

160 hp Mercedes — Nov 16-Aug 17

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	100	70	250
5,000-9,950	90	70	150
10,000-14,950	80	60	100
15,000-up	80	60	100

Maximum Dive: 1,400 ft. Ceiling: 17,000 ft.

Two ff Spandau
Single seat fighter
German

E	FF	RF	T	LW	CW	RW
6	11	15	10	11	11	11

Albatros D III

160 hp Mercedes — Feb 17-Sep 18

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	100	80	300
5,000-9,950	90	70	250
10,000-14,950	90	60	150
15,000-up	80	60	100

Maximum Dive: 1,350 ft. Ceiling: 18,000 ft.

Two ff Spandau
Single seat fighter
German, Turkish

E	FF	RF	T	LW	CW	RW
6	11	15	10	11	11	11

Albatros (Oeffag) D III

185 hp Austro-Daimler — Mar 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	80	300
5,000-9,950	100	80	250
10,000-14,950	100	70	150
15,000-up	90	70	100

Maximum Dive: 1,450 ft. Ceiling: 18,000 ft.

Two ff Schwarzlose
Single seat fighter
Austro-Hungarian

E	FF	RF	T	LW	CW	RW
6	11	15	10	11	11	11

Albatros D V

160 hp Mercedes — Jun 17-Aug 18

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	100	80	300
5,000-9,950	90	70	250
10,000-14,950	90	70	200
15,000-up	80	60	100

Maximum Dive: 1,350 ft. Ceiling: 20,500 ft.

Two ff Spandau
Single seat fighter
German

E	FF	RF	T	LW	CW	RW
6	11	16	11	12	12	12

Albatros D Va

180 hp Mercedes — Nov 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	80	300
5,000-9,950	100	80	250
10,000-14,950	90	70	200
15,000-up	90	70	150

Maximum Dive: 1,400 ft. Ceiling: 20,500 ft.

Two ff Spandau
Single seat fighter
German

E	FF	RF	T	LW	CW	RW
6	11	16	11	12	12	12

Albatros W.4

160 hp Mercedes — Apr 17-Mar 18

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	100	70	200
5,000-9,950	90	60	100

Maximum Dive: 1,350 ft. Ceiling: 9,850 ft.

Two ff Spandau
Single seat seaplane fighter
German

E	FF	RF	T	LW	CW	RW
6	11	15	10	11	11	11

D.F.W. C V

200 hp Benz — Dec 16-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	100	80	250
5,000-9,950	100	70	200
10,000-14,950	90	70	150
15,000-up	80	60	100

Maximum Dive: 1,400 ft. Ceiling: 21,000 ft.

One ff Spandau + One flx Parabellum
Two seat recon, obs*
German

E	FF	RF	T	LW	CW	RW
6	11	15	11	11	11	11

Fokker D VII

160 hp Mercedes — May 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	100	250
5,000-9,950	110	100	200
10,000-14,950	100	90	150
15,000-up	90	90	100

Maximum Dive: 1,500 ft. Ceiling: 19,600 ft.

Two ff Spandau
Single seat fighter
German

E	FF	RF	T	LW	CW	RW
6	11	16	12	12	13	12

Fokker D VII

185 hp B.M.W. — Jul 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	120	110	400
5,000-9,950	120	110	350
10,000-14,950	110	100	300
15,000-up	100	90	200

Maximum Dive: 1,500 ft. Ceiling: 22,900 ft.

Two ff Spandau
Single seat fighter
German

E	FF	RF	T	LW	CW	RW
6	11	16	12	12	13	12

Fokker D VIII

110 hp Oberursel — Oct 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	120	110	400
5,000-9,950	110	110	350
10,000-14,950	110	100	300
15,000-up	100	100	200

Maximum Dive: 1,500 ft. Ceiling: 21,000 ft.

Two ff Spandau
Single seat fighter
German

E	FF	RF	T	LW	CW	RW
6	11	15	11	11	12	11

Fokker Dr I

110 hp Oberursel — Dec 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	110	450
5,000-9,950	100	100	400
10,000-14,950	90	90	300
15,000-up	80	80	200

Maximum Dive: 1,450 ft. Ceiling: 19,600 ft.

Two ff Spandau
Single seat fighter
German

E	FF	RF	T	LW	CW	RW
6	10	14	10	11	12	11

Halberstadt CL II

160 hp Mercedes — Aug 17-Jul 18

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	80	200
5,000-9,950	100	70	150
10,000-14,950	100	70	100
15,000-up	90	60	50

Maximum Dive: 1,500 ft. Ceiling: 16,700 ft.

One ff Spandau + One flx Parabellum
Two seat ground attack, fighter
German

E	FF	RF	T	LW	CW	RW
6	11	15	11	12	12	12

Halberstadt CL IV

160 hp Mercedes — Mar 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	80	300
5,000-9,950	100	80	200
10,000-14,950	100	70	150
15,000-up	90	70	100

Maximum Dive: 1,500 ft. Ceiling: 16,700 ft.

One ff Spandau + One flx Parabellum
Two seat ground attack, fighter
German

E	FF	RF	T	LW	CW	RW
6	11	15	11	12	12	12

Hannover CL IIIa

180 hp Argus — May 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	100	90	250
5,000-9,950	100	80	200
10,000-14,950	90	80	150
15,000-up	80	70	100

Maximum Dive: 1,500 ft. Ceiling: 24,600 ft.

One ff Spandau + One flx Parabellum
Two seat ground attack, fighter, recon
German

E	FF	RF	T	LW	CW	RW
6	13	18	13	14	14	14

L.V.G. C V

200 hp Benz — Sep 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	100	80	200
5,000-9,950	90	70	150
10,000-14,950	90	70	100
15,000-up	80	60	50

Maximum Dive: 1,400 ft. Ceiling: 16,500 ft.

One ff Spandau + One flx Parabellum
Two seat obs, recon, ground attack *
German

E	FF	RF	T	LW	CW	RW
6	11	15	11	12	12	12

L.V.G. C VI

200 hp Benz — Apr 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	80	250
5,000-9,950	100	70	200
10,000-14,950	90	70	150
15,000-up	80	60	100

Maximum Dive: 1,400 ft. Ceiling: 21,350 ft.

One ff Spandau + One flx Parabellum
Two seat obs, recon, ground attack*
German

E	FF	RF	T	LW	CW	RW
6	11	15	11	12	12	12

O. Aviatik (Berg) D I

200 hp Austro-Daimler — Oct 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	90	400
5,000-9,950	110	80	350
10,000-14,950	100	80	250
15,000-up	90	70	150

Maximum Dive: 1,500 ft. Ceiling: 20,150 ft.

Two ff Schwarzlose
Single seat fighter
Austro-Hungarian

E	FF	RF	T	LW	CW	RW
6	11	16	11	12	12	12

Pfalz D III

160 hp Mercedes — Sep 17-Mar 18

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	100	80	250
5,000-9,950	100	80	200
10,000-14,950	90	70	150
15,000-up	80	60	100

Maximum Dive: 1,550 ft. Ceiling: 17,000 ft.

Two ff Spandau
Single seat fighter
German

E	FF	RF	T	LW	CW	RW
6	11	16	11	12	12	12

Pfalz D IIIa

180 hp Mercedes — Dec 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	90	300
5,000-9,950	100	90	250
10,000-14,950	90	80	200
15,000-up	80	70	150

Maximum Dive: 1,550 ft. Ceiling: 17,000 ft.

Two ff Spandau
Single seat fighter
German

E	FF	RF	T	LW	CW	RW
6	11	16	11	12	12	12

Pfalz D XII

180 hp Mercedes — Aug 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	120	100	350
5,000-9,950	110	90	250
10,000-14,950	110	90	200
15,000-up	100	80	150

Maximum Dive: 1,550 ft. Ceiling: 18,500 ft.

Two ff Spandau
Single seat fighter
German

E	FF	RF	T	LW	CW	RW
6	11	16	11	12	12	12

Phonix D I

200 hp Hiero — May 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	80	300
5,000-9,950	110	80	250
10,000-14,950	100	70	200
15,000-up	90	70	150

Maximum Dive: 1,500 ft. Ceiling: 20,150 ft.

Two ff Schwarzlose
Single seat fighter
Austro-Hungarian

E	FF	RF	T	LW	CW	RW
6	11	16	11	12	12	12

Roland C II

160 hp Mercedes — May 16-May 17

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	100	80	150
5,000-9,950	90	70	100
10,000-14,950	90	70	100
15,000-up	80	60	50

Maximum Dive: 1,400 ft. Ceiling: 16,500 ft.

One ff Spandau + One flx Parabellum
Two seat recon*
German

E	FF	RF	T	LW	CW	RW
6	11	16	11	11	11	11

Roland D IIa

180 hp Argus — Feb. 17-Aug. 17

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	70	250
5,000-9,950	100	70	200
10,000-14,950	90	60	150
15,000-up	80	60	100

Maximum Dive: 1,500 ft. Ceiling: 16,400 ft.

Two ff Spandau
Single seat fighter
German

E	FF	RF	T	LW	CW	RW
6	11	15	10	11	11	11

Roland D VIb

200 hp Benz — Jul 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	90	300
5,000-9,950	100	90	250
10,000-14,950	100	80	200
15,000-up	90	80	100

Maximum Dive: 1,500 ft. Ceiling: 19,000 ft.

Two ff Spandau
Single seat fighter
German

E	FF	RF	T	LW	CW	RW
6	11	16	11	12	12	12

Rumpler C IV

260 hp Mercedes — Feb 17-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	110	80	300
5,000-9,950	100	70	250
10,000-14,950	100	70	200
15,000-up	90	60	150

Maximum Dive: 1,400 ft. Ceiling: 21,000 ft.

One ff Spandau + One flx Parabellum
Two seat recon*
German

E	FF	RF	T	LW	CW	RW
6	11	15	11	11	11	11

Siemens-Schuckert D IV

200 hp Siemens-Halske — Aug 18-end

Altitude (ft.)	Top	Turn	Climb (ft.)
to 4,950	120	110	500
5,000-9,950	110	110	450
10,000-14,950	100	100	400
15,000-up	100	100	300

Maximum Dive: 1,500 ft. Ceiling: 26,250 ft.

Two ff Spandau
Single seat fighter
German

E	FF	RF	T	LW	CW	RW
6	11	15	11	12	12	12

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OPTIONAL TAILING CARDS

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OPTIONAL TAILING CARDS

UP

Climb
Stall
Loop
Immelmann
Straight

DOWN

Dive
Falling Leaf
Split-S
Tail Spin
Straight

LEFT

Bank Left
Turn Left
Circle Left
Wingover Left
Barrel Roll Left

RIGHT

Bank Right
Turn Right
Circle Right
Wingover Right
Barrel Roll Right

UP

Climb
Stall
Loop
Immelmann
Straight

DOWN

Dive
Falling Leaf
Split-S
Tail Spin
Straight

LEFT

Bank Left
Turn Left
Circle Left
Wingover Left
Barrel Roll Left

RIGHT

Bank Right
Turn Right
Circle Right
Wingover Right
Barrel Roll Right

UP

Climb
Stall
Loop
Immelmann
Straight

DOWN

Dive
Falling Leaf
Split-S
Tail Spin
Straight

LEFT

Bank Left
Turn Left
Circle Left
Wingover Left
Barrel Roll Left

RIGHT

Bank Right
Turn Right
Circle Right
Wingover Right
Barrel Roll Right

UP

Climb
Stall
Loop
Immelmann
Straight

DOWN

Dive
Falling Leaf
Split-S
Tail Spin
Straight

LEFT

Bank Left
Turn Left
Circle Left
Wingover Left
Barrel Roll Left

RIGHT

Bank Right
Turn Right
Circle Right
Wingover Right
Barrel Roll Right

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MANEUVER CARD

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BANK LEFT

Maximum climb 50′
Maximum dive 50′

Simple

TURN LEFT

Maximum climb 100′
Maximum dive 100′

Simple

BANK RIGHT

Maximum climb 50′
Maximum dive 50′

Simple

TURN RIGHT

Maximum climb 100′
Maximum dive 100′

Simple

STRAIGHT

Maximum climb 50′
Maximum dive 50′

Simple

CIRCLE

Maximum climb 100′
Maximum dive 100′

Reversal

LOOP

Maximum climb 100′
Maximum dive 100′

Reversal

STALL

Maximum climb 100′/ 50′
No dive restrictions

Reversal

CLIMB

Minimum climb 200′/ 100′

Altitude

DIVE

Minimum dive 400′

Altitude

TAIL SPIN

Minimum dive 400′

Fancy

SPLIT-S

Minimum dive 400′

Fancy

IMMELMANN

Maximum climb 200′
Maximum dive 200′

Fancy

WINGOVER

Maximum climb 50′
Maximum dive 100′

Fancy

BARREL ROLL

Maximum climb 100′
Maximum dive 100′

Fancy

(Cut into individual cards.)

FALLING LEAF

Minimum dive 200′

Fancy

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DAWN PATROL™

MANEUVER CARD

BANK LEFT

Maximum climb 50′
Maximum dive 50′

Simple

TURN LEFT

Maximum climb 100′
Maximum dive 100′

Simple

BANK RIGHT

Maximum climb 50′
Maximum dive 50′

Simple

TURN RIGHT

Maximum climb 100′
Maximum dive 100′

Simple

STRAIGHT

Maximum climb 50′
Maximum dive 50′

Simple

CIRCLE

Maximum climb 100′
Maximum dive 100′

Reversal

LOOP

Maximum climb 100′
Maximum dive 100′

Reversal

STALL

Maximum climb 100′/ 50′
No dive restrictions

Reversal

CLIMB

Minimum climb 200′/ 100′

Altitude

DIVE

Minimum dive 400′

Altitude

TAIL SPIN

Minimum dive 400′

Fancy

SPLIT-S

Minimum dive 400′

Fancy

IMMELMANN

Maximum climb 200′
Maximum dive 200′

Fancy

WINGOVER

Maximum climb 50′
Maximum dive 100′

Fancy

BARREL ROLL

Maximum climb 100′
Maximum dive 100′

Fancy

(Cut into individual cards.)

FALLING LEAF

Minimum dive 200′

Fancy

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MANEUVER CARD

DAWN PATROL™

MANEUVER CARD

BANK LEFT

Maximum climb 50′
Maximum dive 50′

Simple

TURN LEFT

Maximum climb 100′
Maximum dive 100′

Simple

BANK RIGHT

Maximum climb 50′
Maximum dive 50′

Simple

TURN RIGHT

Maximum climb 100′
Maximum dive 100′

Simple

STRAIGHT

Maximum climb 50′
Maximum dive 50′

Simple

CIRCLE

Maximum climb 100′
Maximum dive 100′

Reversal

LOOP

Maximum climb 100′
Maximum dive 100′

Reversal

STALL

Maximum climb 100′/50′
No dive restrictions

Reversal

CLIMB

Minimum climb 200′/100′

Altitude

DIVE

Minimum dive 400′

Altitude

TAIL SPIN

Minimum dive 400′

Fancy

SPLIT-S

Minimum dive 400′

Fancy

IMMELMANN

Maximum climb 200′
Maximum dive 200′

Fancy

WINGOVER

Maximum climb 50′
Maximum dive 100′

Fancy

BARREL ROLL

Maximum climb 100′
Maximum dive 100′

Fancy

(Cut into individual cards.)

FALLING LEAF

Minimum dive 200′

Fancy

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MANEUVER CARD

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MANEUVER CARD

DAWN PATROL™

MANEUVER CARD

BANK LEFT

Maximum climb 50′
Maximum dive 50′

Simple

TURN LEFT

Maximum climb 100′
Maximum dive 100′

Simple

BANK RIGHT

Maximum climb 50′
Maximum dive 50′

Simple

TURN RIGHT

Maximum climb 100′
Maximum dive 100′

Simple

STRAIGHT

Maximum climb 50′
Maximum dive 50′

Simple

CIRCLE

Maximum climb 100′
Maximum dive 100′

Reversal

LOOP

Maximum climb 100′
Maximum dive 100′

Reversal

STALL

Maximum climb 100′/50′
No dive restrictions

Reversal

CLIMB

Minimum climb 200′/100′

Altitude

DIVE

Minimum dive 400′

Altitude

TAIL SPIN

Minimum dive 400′

Fancy

SPLIT-S

Minimum dive 400′

Fancy

IMMELMANN

Maximum climb 200′
Maximum dive 200′

Fancy

WINGOVER

Maximum climb 50′
Maximum dive 100′

Fancy

BARREL ROLL

Maximum climb 100′
Maximum dive 100′

Fancy

(Cut into individual cards.)

FALLING LEAF

Minimum dive 200′

Fancy

DAWN PATROL™

Role-Playing Game of WW I air combat

This Is It! **Researched and play-tested for over 10 years! DAWN PATROL™ aerial combat game was inspired by historical encounters that occurred during the great World War I dogfight era. Fly one step beyond the popular FIGHT IN THE SKIES™ game and soar to new heights of role playing. Become part of a legendary team of flying aces, wingmen and combat heroes. YOU are a vital element of the DAWN PATROL™ game.**

Any number can play. There are an infinite number of game situations, or if you choose, there's an assortment of ready-made scenarios for up to 12 players!

Game includes: Rulebook, playing-aid charts, full-color gameboard, specifications for individual aircraft capabilities, dice, and over 100 colorful die-cut aircraft counters.

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The Game Wizards

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M.G.

Pfalz D XII

A.A.

Phonix D I

Fokker Dr 1

D.F.W.

Roland C II

M.G.

Fokker D VII

Pfalz D III

Rumpler

Fokker D VIII

Berg D I

A.A.

Fokker D VII

Fokker D VII

A.A.

Pfalz D III

Albatros

A.A.

Halberstadt

M.G.

A.E.G.

Pfalz D III

Roland C II

Pfalz D III

Albatros

Roland D IIa

Roland D VIb

Hannover

Hannover

Fokker D VII

D.F.W.

Halberstadt

Fokker Dr 1

A.A.

M.G.

Onion

Albatros

S.S.W. D IV

Phonix D I

M.G.

Fokker Dr 1

Fokker D VII

Fokker Dr 1

Fokker D VIII

Roland D VIb

Albatros

Roland D IIa

L.V.G.

Albatros C

L.V.G.

Albatros

Albatros C

A.E.G.

Berg D I

Drachen

Onion

S.S.W. D IV

Pfalz D XII

Rumpler

M.G.

S.P.A.D.

Nieuport 28

Snipe

A-W- F.K. 8

Bristol

Bristol

Morane

D.H. 4

Pup

Triplane

Dorand

S.P.A.D.

Hanriot HD-1

SE 5/5a

Camel

Breguet

S.P.A.D.

Breguet

S.P.A.D.

Dorand

D.H. 9

Nieuport 17

Nieuport 17

Nieuport 17

R.E. 8

D.H. 9

Pomilio

Pup

Camel

S.P.A.D.

S.A.M.L.

Camel

D.H. 4

Nieuport 28

Dolphin

S.A.M.L.

Pup

D.H. 5

A-W- F.K. 8

Morane

Nieuport 17

Camel

Salmson

S.P.A.D.

R.E. 8

Sopwith 1½

Salmson

Hanriot HD-1

SE 5/5a

SE 5/5a

SE 5/5a

D.H. 4

S.P.A.D.

Pomilio

Snipe

Hanriot HD-1

Balloon

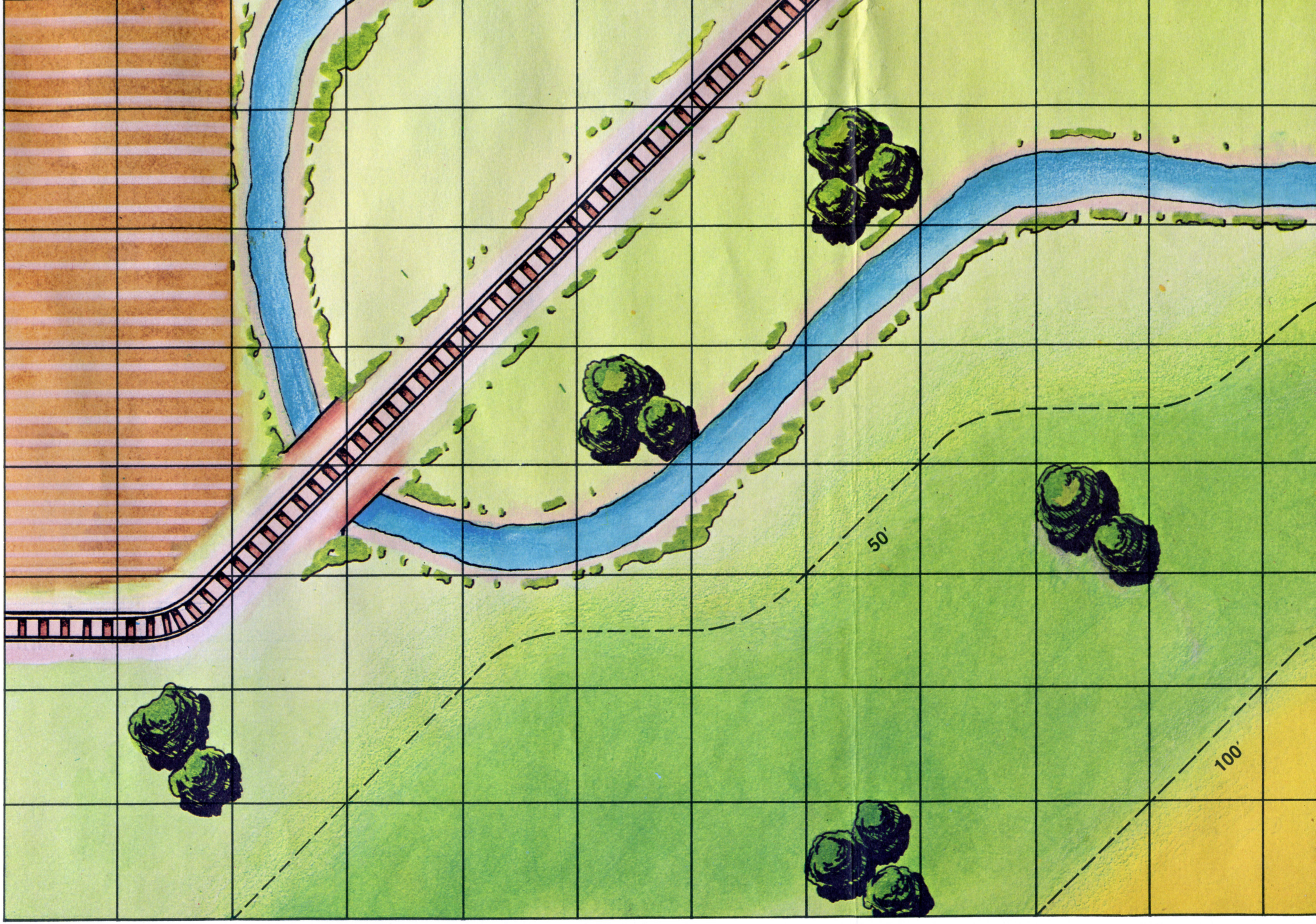
Dolphin

Bristol

Triplane

Sopwith 1½

D.H. 5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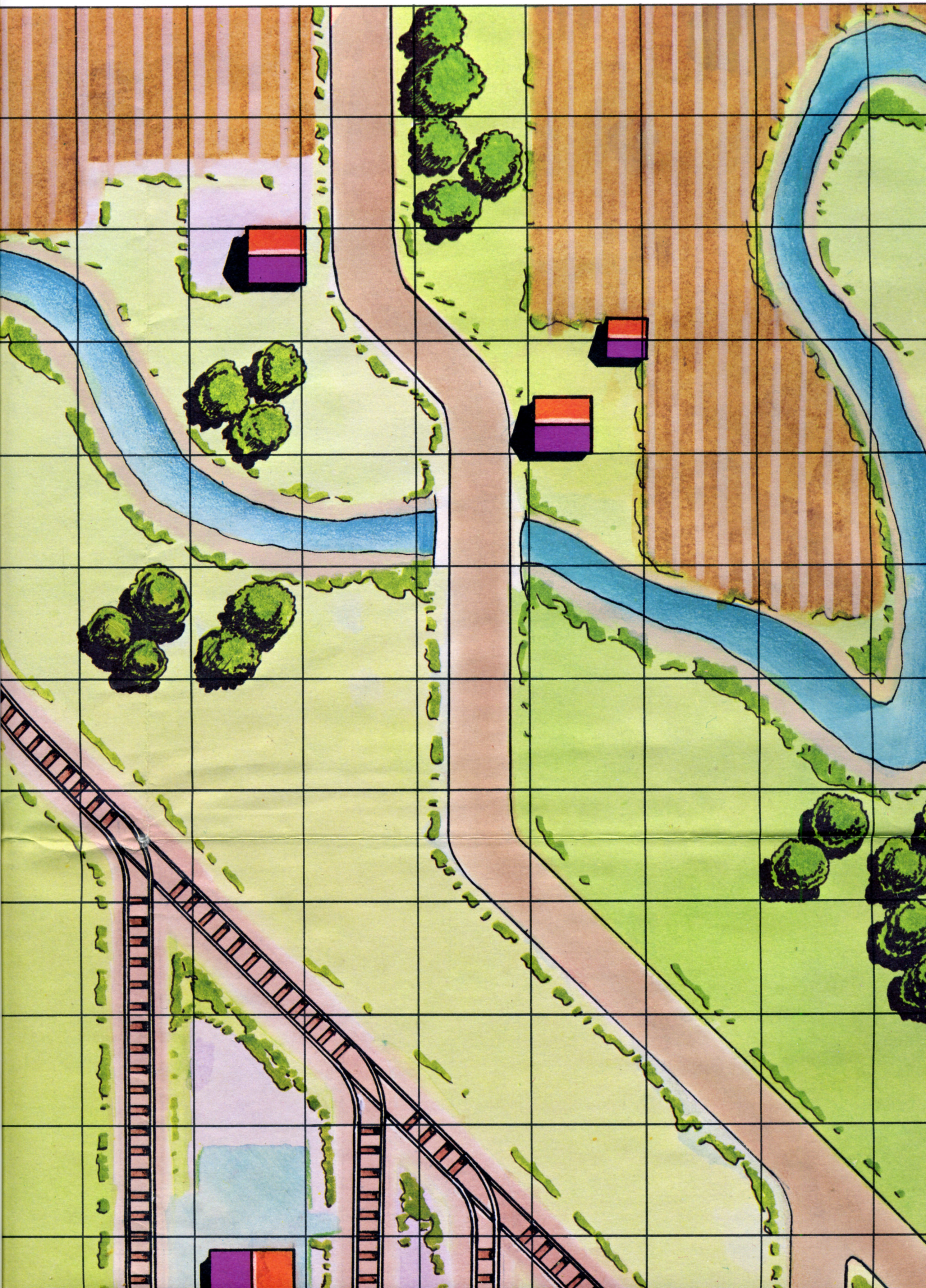

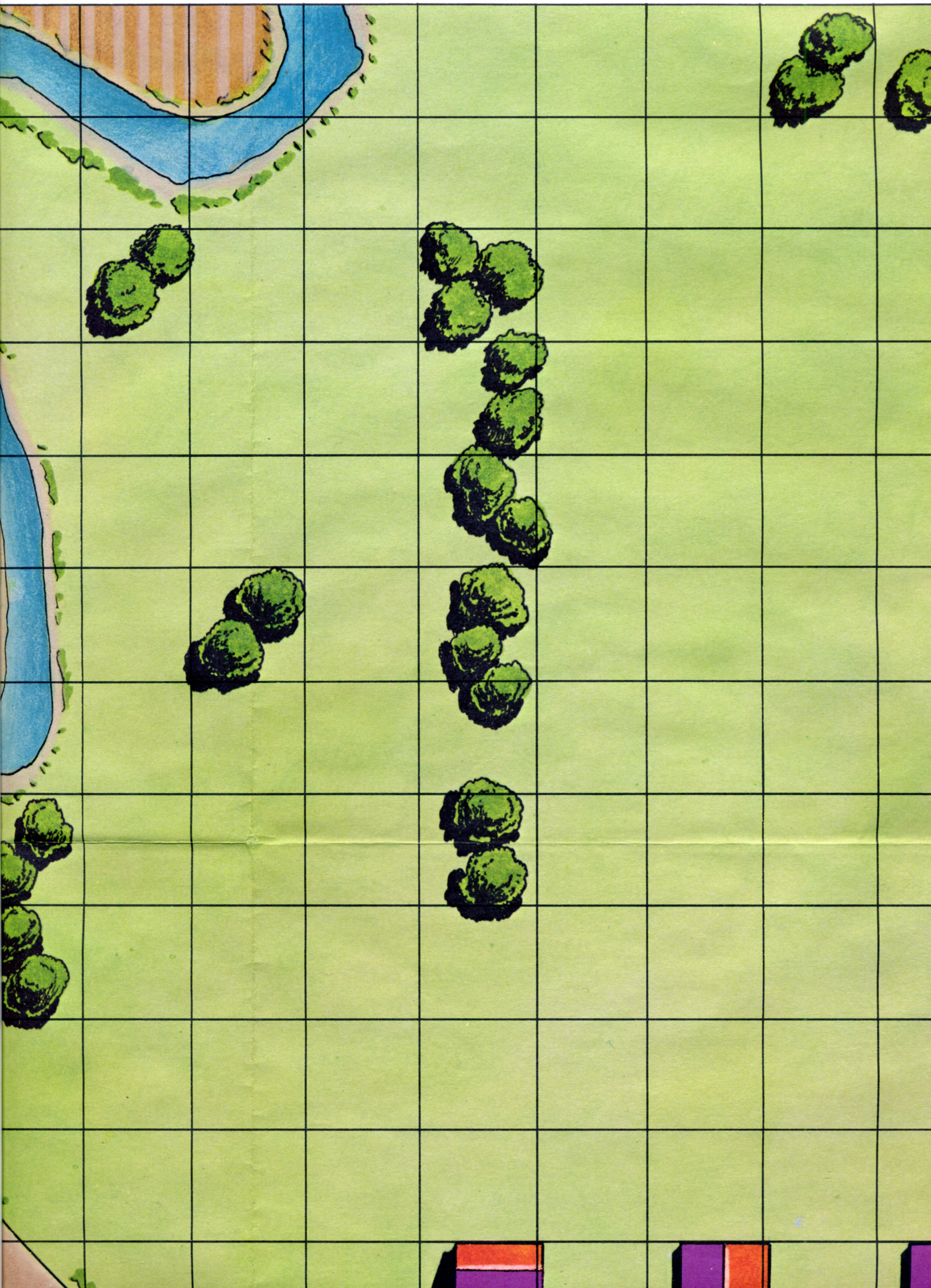

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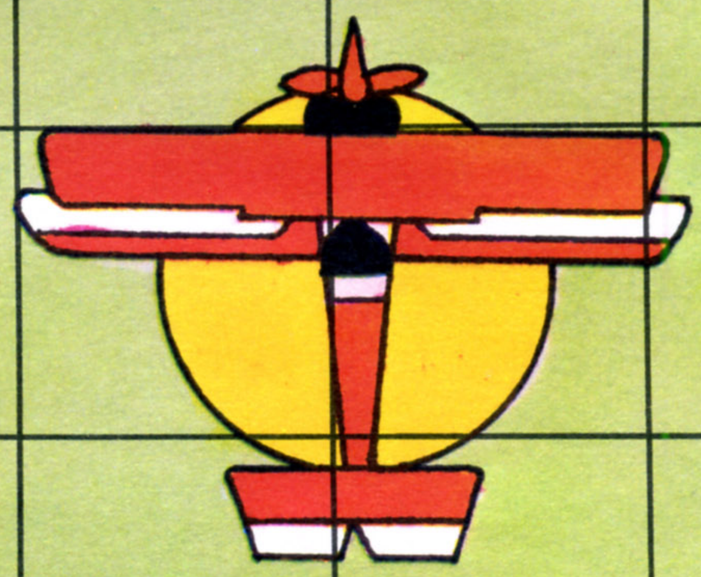

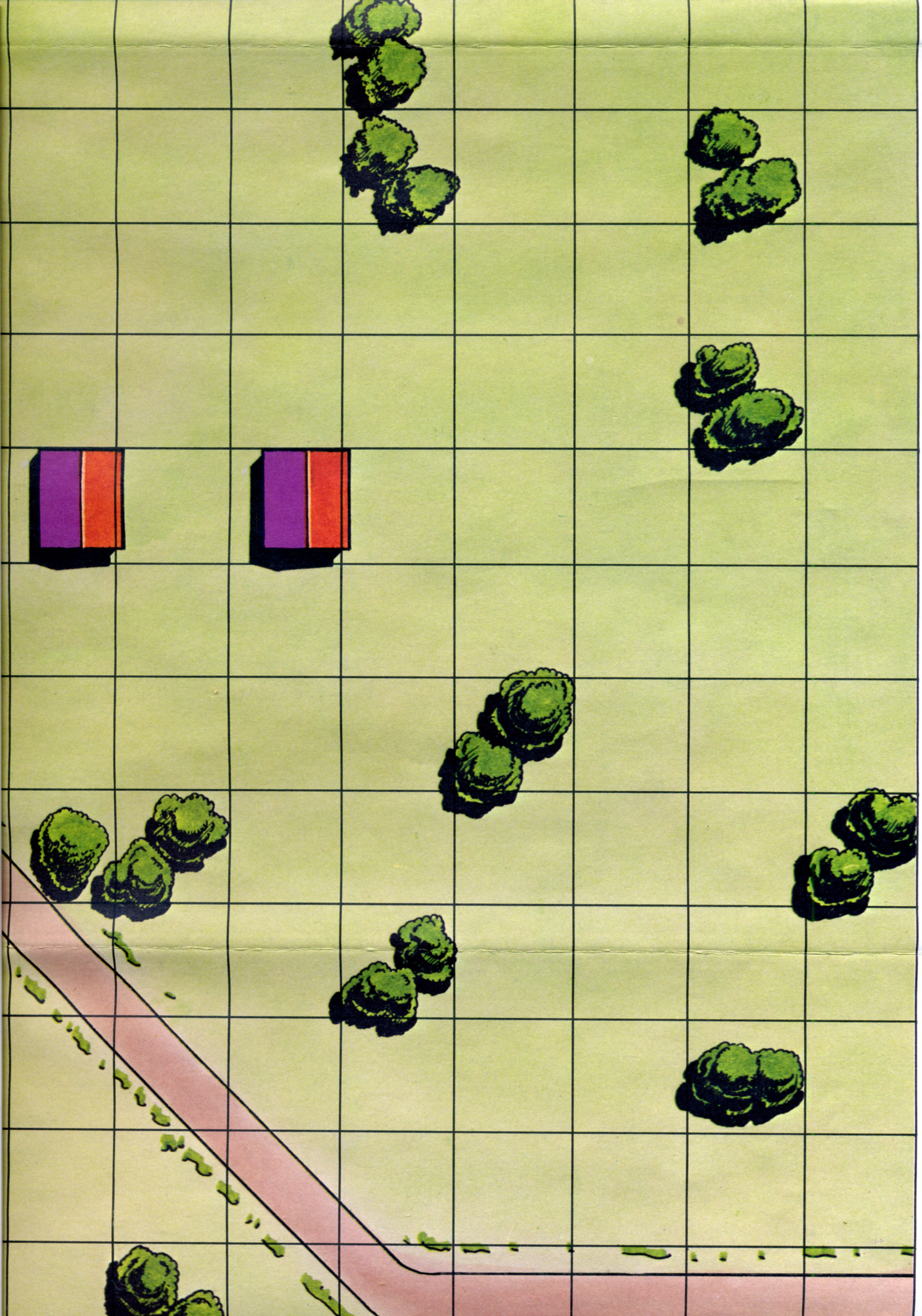

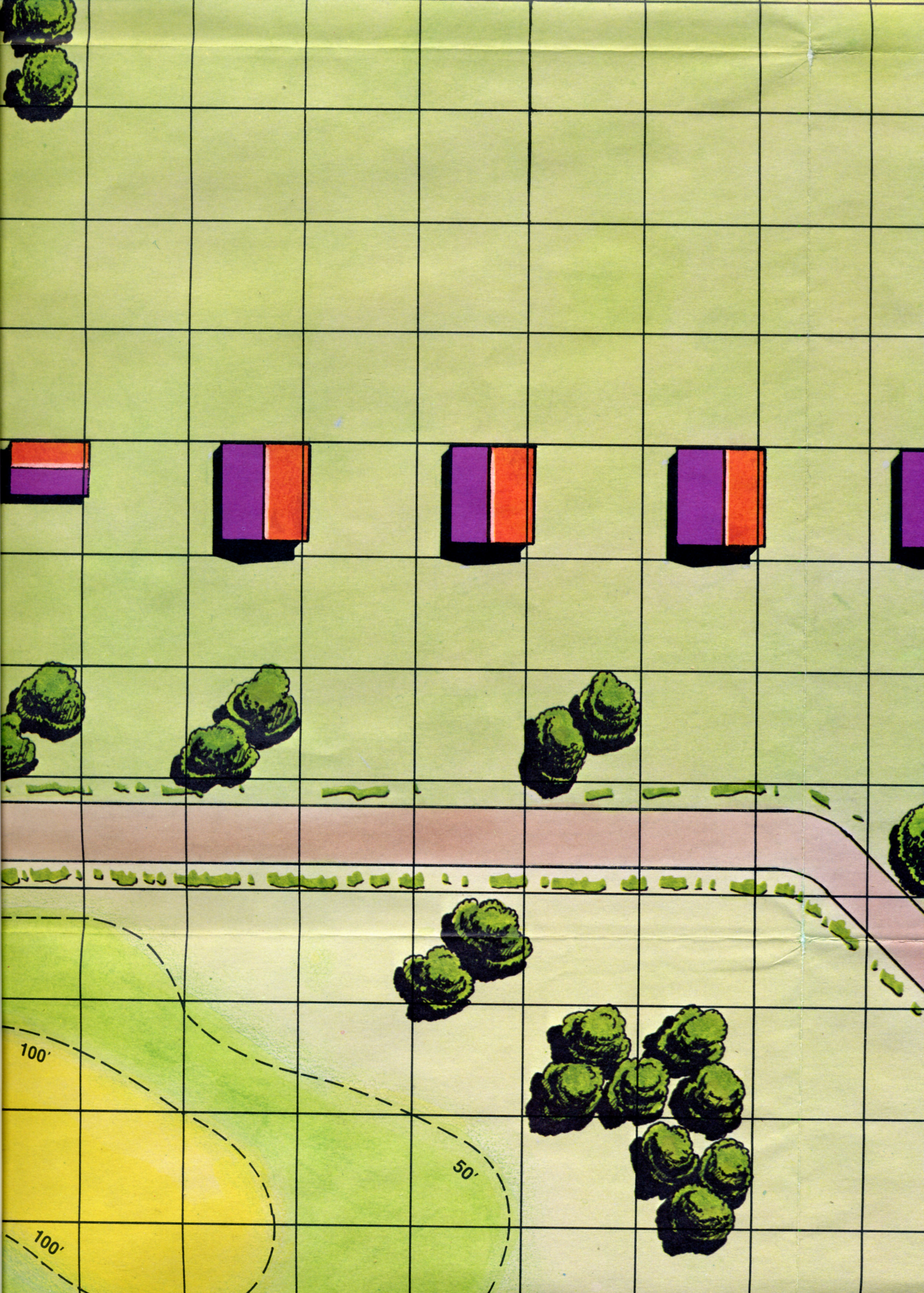
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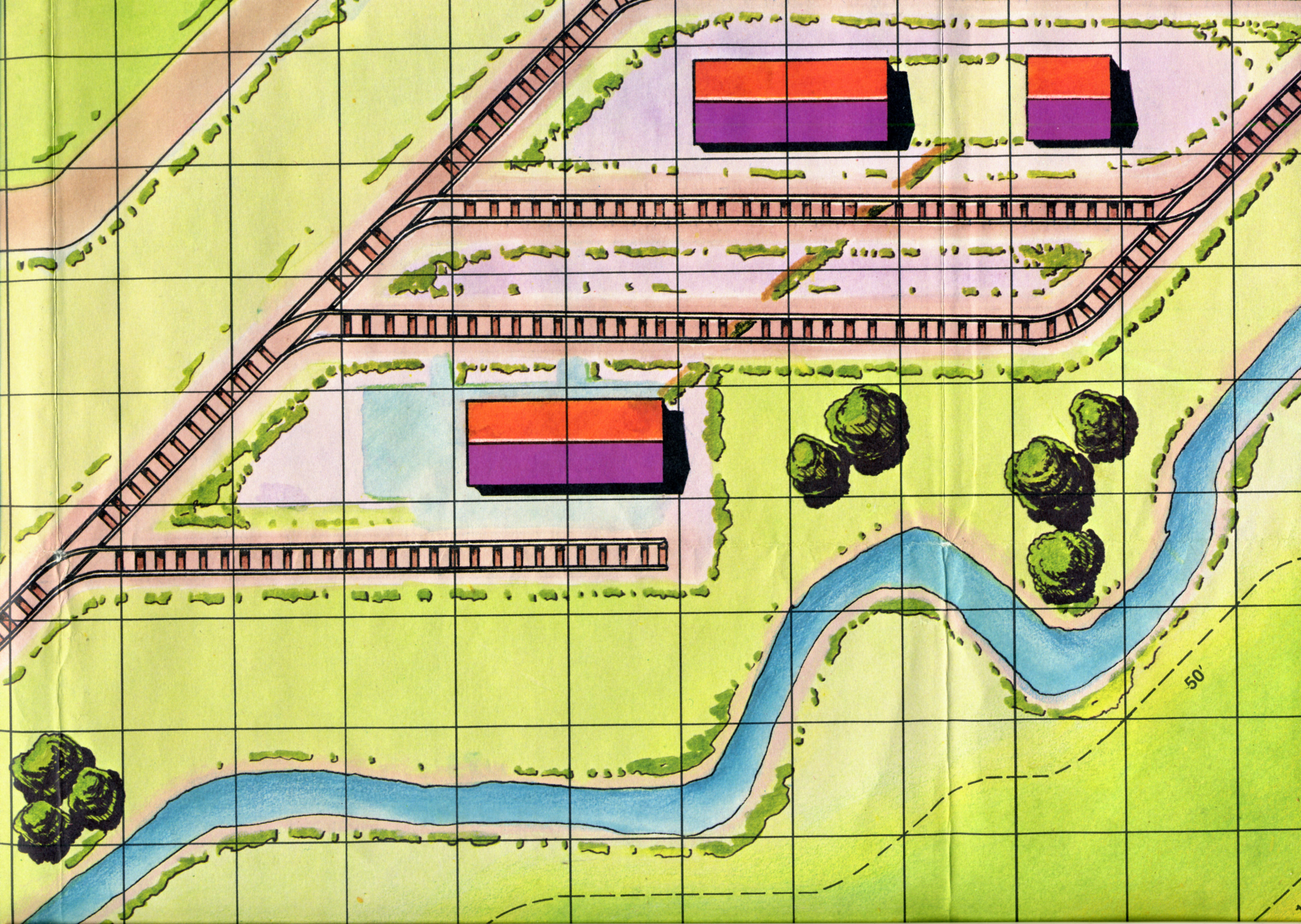
50'
100'

100'
100'
50'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50'

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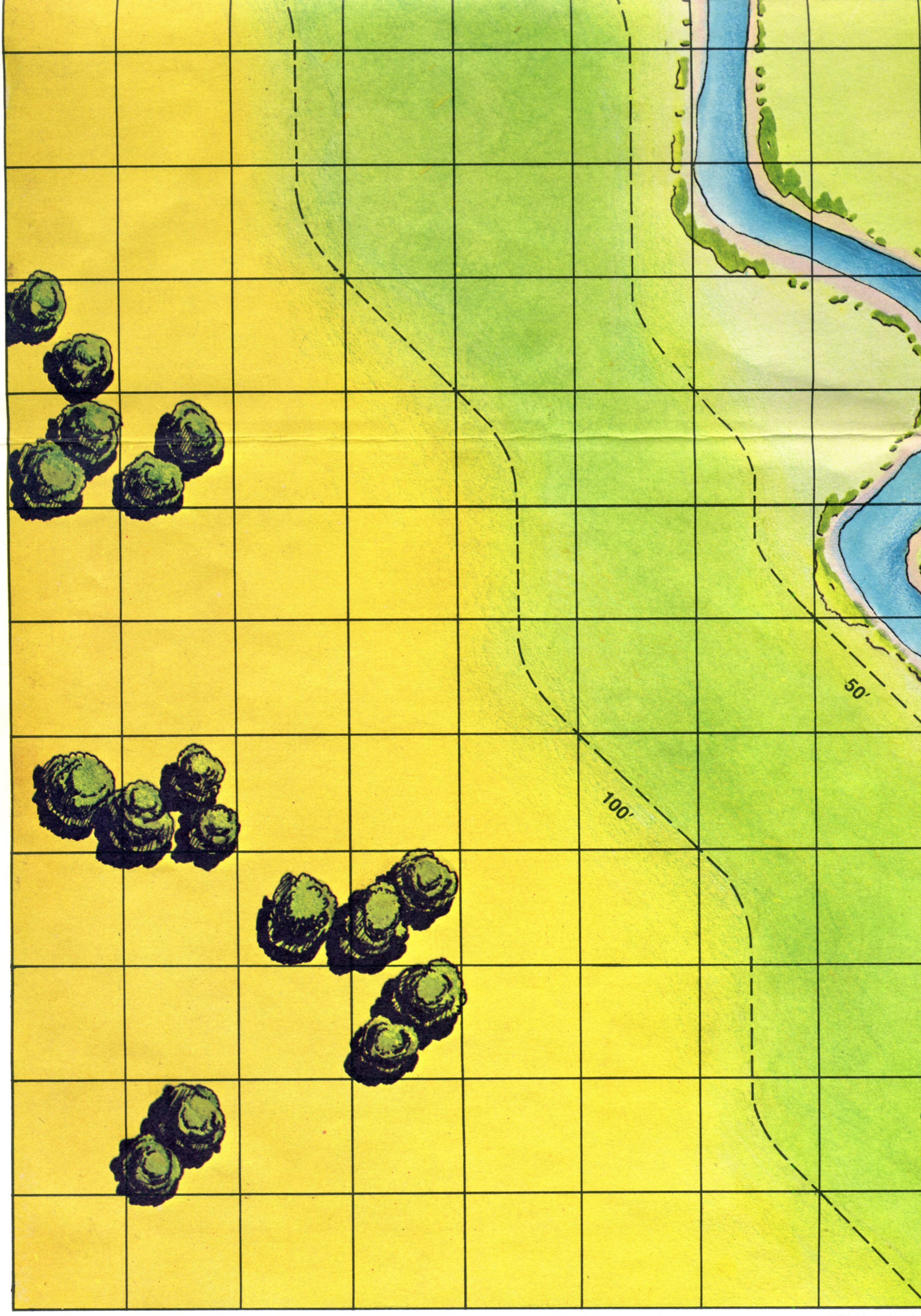
100'



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