

AIR ACTION Weekly

AUTUMN 1937 - SPECIAL EDITION

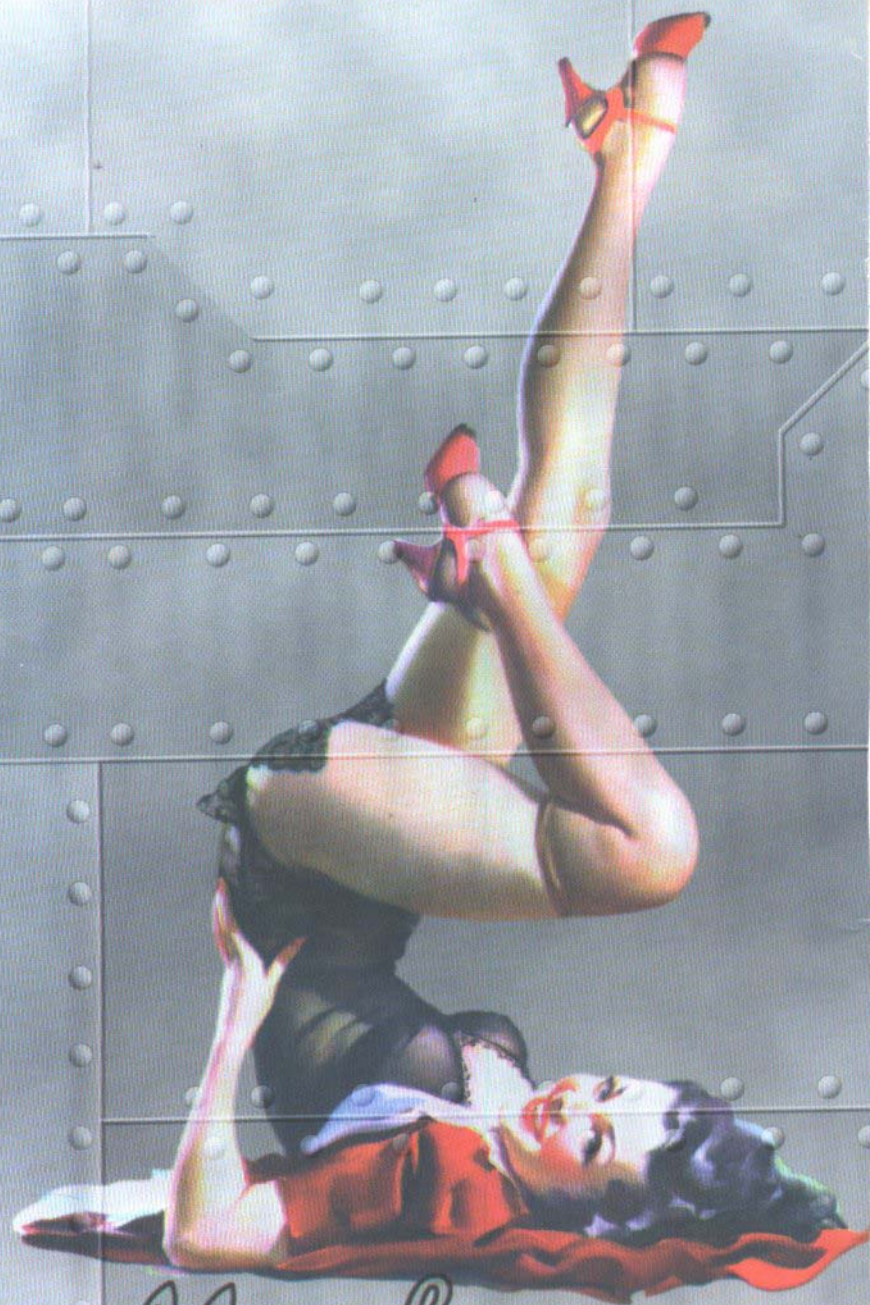
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The Rules of Air Combat

What every pilot should know

PLUS!
Zeppelin Combat:
A Complete Guide





Manhattan Mistress

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A special thanks to J.M. Albertson for moving us from Europe to America and to Mitch Gitelman and Heinz Schuller for being there at the painful beginning.

On a personal note, I would like to thank all of the people who have worked at nights and on weekends to bring this common dream to life. A game may seem to be a small thing to be called a common dream, but it has indeed been a dream to work with such a talented group from around the world on a universe that has become an extension of all us. Thank you for what has been and I hope will continue to be a very rewarding experience.

Jordan Weisman

P.S. To all the wives, husbands, children, and significant others, (in my case Dawne, Zach, Nate, and Lucas) - thanks for not clipping our wings and letting us fly.

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The world we live in is a dangerous place. For those of us who ply the skies, life or death hangs on the whim of a small gust of wind, the ballistic arc of a machine gun bullet, the cockeyed flight of a rocket. Whether we live or die often seems as random as a roll of the dice.

This special issue of Air Action Weekly explores what air combat is really about. Our hope is that in more closely examining the intricacies of aerial warfare, we can help dispel some of the mystery and remove some of the randomness. But be warned: even when they understand all the factors involved, the world's best pilots still attribute much of their success to luck.

So stay alert, check your six, and read on to learn more about the deadly art of sky dancing.

Nero L. MacLeon
Editor, Air Action Weekly



TO THE SKIES!

INTRODUCTION



In the world of *Crimson Skies*, the planes are faster, the engines are bigger, the guns are more powerful and the adventures more lethal. Things are different in this version of 1937.

THE SETTING

The world of *Crimson Skies* is dominated by all sizes of aircraft, from the little autogyro taxis careening between the towering skyscrapers of Manhattan to the majestic monoliths of the air, the giant transport zeppelins. It is a time of gunship diplomacy and airship piracy, an era of amazing aeronautical advances—it is the age of the fighter pilot.

Only seventy years after fighting a bloody civil war to maintain the union, the United States has shattered under the weight of the Great Depression, regional Prohibition and mounting isolationism. The transcontinental railroad and the budding highway system have become useless as they now cross hostile borders.

Commerce and trade have left the ground. Air travel and combat, once a national obsession, now becomes a life line connecting allied countries.

Giant zeppelins crisscross the skies, carrying both passengers and cargo.

Where money goes, evil follows. Squadrons of pirates prey on the behemoths of the air from their zeppelin headquarters, stealing cargoes and sometimes even the huge ships themselves. Privateers hunt the shipping lanes under the authority of Letters of Marque that define the split between the raiders and the governments they defy.

Militias have formed in every nation to fight the pirates—and each other. The Empire States Broadway Bombers and The Hollywood Knights are famous for their prowess as pirate hunters, and for their rivalry with each other. Units such as the Texas Air Rangers, the Dervish Air Unit of the French Foreign Legion, The Wind Warriors of the Navajo Nation and the Dusters of the People's Collective rise to the air each day to do battle above a constantly changing political landscape.

THE GAME

Crimson Skies is a character-based board game of dogfighting and divebombing in an avia-

tion-dominated world; a simple, fast-playing game of pulp-fiction-style air combat. It is a game about the men and women who pilot flying nightmares, the metal-sheathed birds of prey that spit death from the sky.

In *Crimson Skies*, you are at the top of the aviation food chain—a fighter pilot, one of the fearless men and women who take to the skies each day for honor or profit. Each player generates a minimum of two characters, a pilot and his or her wingman. If your characters survive from mission to mission, they gain experience that can translate into better skills, and thus even better chances for future survival and success. While this is a combat board game, not a roleplaying game, telling tales about your characters will invest the game with action, drama and humor, making the game-playing experience even more enjoyable.

To keep the action fast and furious, the game mechanics have been kept simple. To be a successful fighter pilot, you must predict your enemy's location, and so the game features a simultaneous movement system that rewards good planning. When the lead starts flying, combat becomes very graphic. Each of the weapon types uses a different damage profile that literally eats into the enemy plane, tearing holes in armor and then destroying vital internal components. If the pilot has a steady hand and is able to keep his or her shots in a tight grouping, the damage profiles build on each other to dig even deeper into the plane's interior. Death comes in many forms; from wings being ripped off by weapons fire, to gas tanks exploding from a magnesium round, to mid-air collisions.

In no time at all, the sky can turn crimson with the blood of the vanquished.

WHAT'S IN THE BOX

The *Crimson Skies* boxed set contains everything needed to play the game. A description of each of the contents follows this list.

- Three issues of Air Action Weekly, the authority on the *Crimson Skies*.

Issue 1: The Rules of Air Combat

Issue 2: AAW's 1937 Aircraft Review

Issue 3: Warriors of the Air

- 1 sheet of 24 Aircraft Fuselage playing pieces
- 2 sheets of 12 Aircraft Wings playing pieces
- Filled-out record sheets for 14 planes and 1 zep-pelin, four blank record sheets, 2 copies of the reference sheet and a pilot's campaign log
- Three full-color mapsheets
- 1 plastic damage template
- 14 aircraft stands
- 1 10-sided die

Playing Pieces

Crimson Skies playing pieces consist of an airplane's fuselage and wings, plus a stand. Some aircraft may have additional parts.

Record Sheets

The *Crimson Skies* record sheet contains information needed to fly the plane on a mission. Players use the record sheets to record damage, track changes to the plane's performance capabilities and record the move they plan for each turn.

Pilot Information

This section lists the name, skills, history and affiliation of the pilot or wingman. See *Pilots and their Planes*, p. 17 for more information.

Weapon Loadout

This section notes the caliber and type of ammunition for each machine gun and the ordnance loadout of rockets and/or other munitions. This section also indicates if a gun is jammed. There is a slot for each possible gun position and for each ordnance hardpoint. Some munitions can be loaded on a single hardpoint. Others, such as large bombs, require multiple hardpoints, while non-lethal rockets load two to a hardpoint. See *Weapons*, p. 40.

Damage Diagram

The damage diagram shows the arrangement of armor and critical components for the aircraft. There are four possible layouts: front- and rear-engine fighters, and front- and rear-engine fighters with turrets.

Weapon Loadout

Pilot Information

Turn Record

CRIMSON SKIES

Airplane Record Sheet
Blank Plane

Turn	Maneuver	Alt	Speed	Acceleration
1	Push	Stroke	Stroke	Stroke-G
2	Push	Stroke	Stroke	Stroke-G
3	Push	Stroke	Stroke	Stroke-G
4	Push	Stroke	Stroke	Stroke-G
5	Push	Stroke	Stroke	Stroke-G
6	Push	Stroke	Stroke	Stroke-G
7	Push	Stroke	Stroke	Stroke-G
8	Push	Stroke	Stroke	Stroke-G
9	Push	Stroke	Stroke	Stroke-G
10	Push	Stroke	Stroke	Stroke-G
11	Push	Stroke	Stroke	Stroke-G
12	Push	Stroke	Stroke	Stroke-G
13	Push	Stroke	Stroke	Stroke-G
14	Push	Stroke	Stroke	Stroke-G
15	Push	Stroke	Stroke	Stroke-G
16	Push	Stroke	Stroke	Stroke-G
17	Push	Stroke	Stroke	Stroke-G
18	Push	Stroke	Stroke	Stroke-G
19	Push	Stroke	Stroke	Stroke-G
20	Push	Stroke	Stroke	Stroke-G
21	Push	Stroke	Stroke	Stroke-G
22	Push	Stroke	Stroke	Stroke-G
23	Push	Stroke	Stroke	Stroke-G
24	Push	Stroke	Stroke	Stroke-G

Weapon Loadout

GUNS

	1	2	3	4	5	6	7	8
Caliber								
Ammo								
Range								
Accuracy								

NOCKETS

	1	2	3	4	5	6	7	8
Type								
Range								

Base To Hit

Base To Hit	1	2	3	4	5	6	7	8	9	10

Port Wing Leading

Port Wing Leading	1	2	3	4	5	6	7	8	9	10

Starboard Wing Leading

Starboard Wing Leading	1	2	3	4	5	6	7	8	9	10

Performance Diagram

Max Speed

Max Speed	1	2	3	4	5	6	7	8	9	10

Max Gs

Max Gs	1	2	3	4	5	6	7	8	9	10

Performance Calculations

Rolling Engine Calculation

- Base Number
- Amount over Current Max.
- 2 if Shrouded
- Pilot Natural Touch Skill
- Target Number

Stalling Calculation

- Base Number
- Amount over Current Max.
- 2 if Shrouded
- Pilot Natural Touch Skill
- Target Number

Starboard Gs Calculation

- Base Number
- Amount over Current Max.
- 2 if Shrouded
- Pilot Natural Touch Skill
- Target Number

Port Gs Calculation

- Base Number
- Amount over Current Max.
- 2 if Shrouded
- Pilot Natural Touch Skill
- Target Number

Aircraft Performance

Max Speed

Max Speed	1	2	3	4	5	6	7	8	9	10

Max Gs

Max Gs	1	2	3	4	5	6	7	8	9	10

Damage Diagram

Performance Diagram

Record sheet with call-outs

Performance Diagram

This diagram tracks the aircraft's current maneuver capabilities. Each statistic appears as a row of boxes representing part of the aircraft. The speed is shown as the fuselage. G-force is shown on each wing for turns in either direction. Acceleration and Deceleration appear on the twin

tails. As these stats change as a result of damage, the player simply marks off boxes of the lost capability, so that the highest number shown is always the current capability of the plane.

Turn Record

Players use this section of the record sheet to

record their planned moves and note any temporary effects, such as pilot shock, smoke from the plane, jammed guns and persistent damage such as burning magnesium rounds or a drill rocket.

Reference Page

The reference page provides the tables and rules summaries most often needed to play the game, including the maneuver template, the to-hit calculation table, the target deflection diagram/hit location table, and the firing/tailing arcs diagram.

Maneuver Template

All aircraft use the same maneuver template. To determine the limits and relative risks of a specific maneuver for any plane, simply compare the current stats on the plane's performance diagram to the desired move on the maneuver template.

Each possible maneuver is indicated by an arrow pointing to a hex side and a number-letter

designation. The first number is the speed required to make the maneuver. The letter indicates whether the plane is turning left or right or going straight. The second number designates the hexrow of the movement. The Gs required to make the maneuver are shown by the number of bars behind the facing arrow. For example, an arrow with no bars is a 0 G maneuver, while an arrow with 6 bars is a 6 G maneuver.

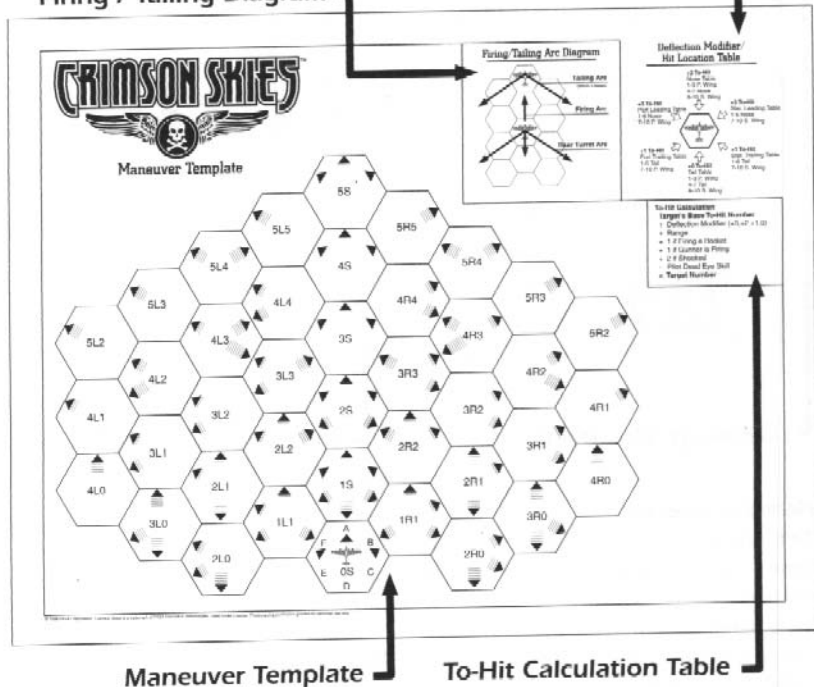
Mapsheets

The 22 x 34 inch mapsheets used in *Crimson Skies* are divided into six-sided areas called hexes (short for hexagons). Each hex represents an abstract area of the sky above the illustrated ground terrain. The hexes are used to indicate relative distances and to regulate movement. A hex and the surrounding six hexes are called a mega-hex.

The three mapsheets represent three distinct

Deflection Modifier / Hit Location Table

Firing / Tailing Diagram



Reference sheet with call-outs

types of terrain for different types of battles. One mapsheet is enough room for most fighter engagements to take place. A battle with or between two zeppelins, however, requires more space. The reverse side of two of the mapsheets are zeppelin maps, and the third contains blank hexes. For a battle between a zeppelin and fighters, position the blank mapsheet and one of the zeppelin maps with their long sides together so that the hexes continue uninterrupted across both sheets. For a battle between two zeppelins, add the second zeppelin mapsheet to the opposite side of the blank mapsheet.

The terrain on the mapsheets does not affect the movement or combat of any aircraft except for those hexes marked as impassable with a red or black dot in the center of the hex. Impassable hexes also block line of sight and weapons fire.

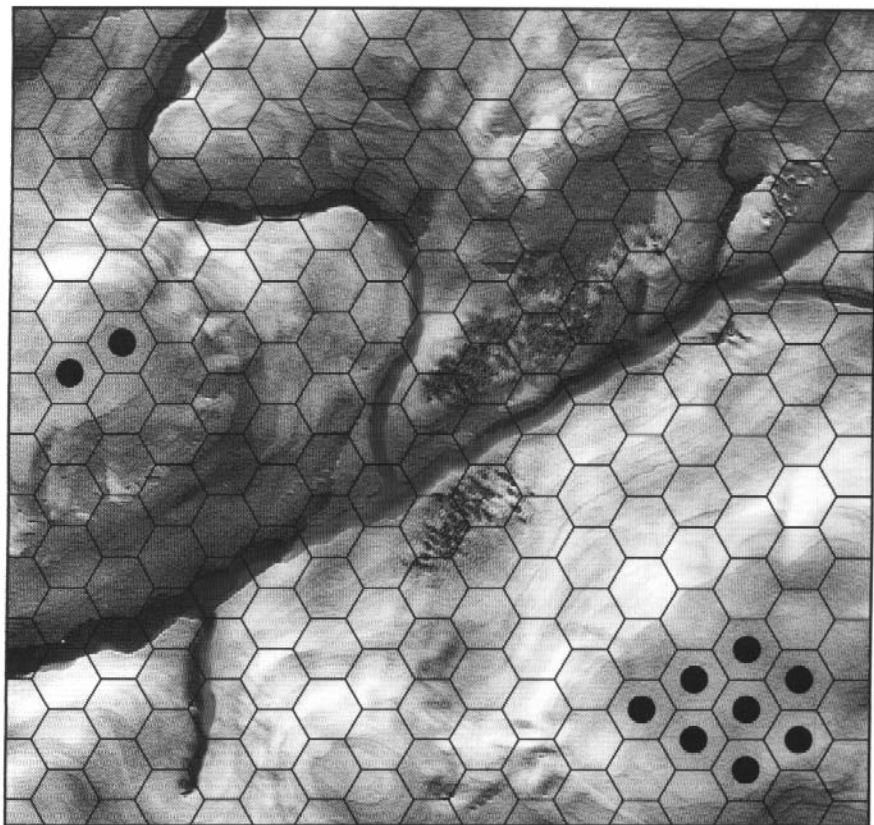
See *What Is A Valid Target?*, p. 33.

Certain terrain objects may be part of a specific mission's objectives.

ROLLING THE DICE

In *Crimson Skies*, as in all dogfights, higher is better. When rolling dice to resolve any actions or situations, you always want to get the highest number possible. All die rolls are compared to a target number, calculated by adding and subtracting modifiers to a base number. To succeed in a task, the player must roll a number equal to or greater than the modified target number.

To reflect the fact that there is no such thing as a "sure thing", a die roll of 10 is always a success and a 1 is always a failure, regardless of the actual target number required for the roll.



The black dots (red on color maps) represent impassable terrain.

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PLAYING THE GAME



To begin a game, simply choose or create a mission. This can be a published mission from the *Warriors of the Air* book, a scenario from another product, a mission posted at CrimsonSkies.com or a mission created by the players. Lay out the mapsheets as required by the mission and fill out the appropriate aircraft record sheets. Place the appropriate aircraft counters in their starting positions on the map, and you're ready to begin.

SEQUENCE OF PLAY

A *Crimson Skies* game consists of a series of turns. Each turn consists of several smaller segments of time called phases. During each phase, players will take a specific type of action, such as moving or attacking. Players perform the phases of every turn in a specific order, described below. The specific rules used in each of the phases appear in the following sections.

Each phase of a turn may include multiple steps, depending on the game situation. Every turn may not require players to complete all phases; for example, there may be no combat or tailing opportunities in a turn.

Movement Phase

1. Choose and secretly record moves for the planes of pilot and wingman.
The pilot may bail out during the Movement Phase. See *Bailing Out*, p. 29.
2. Reveal and resolve movement choices.
Roll the dice for any "pushes" (see *Pushing the Envelope*, p. 25) and move the planes accordingly. Resolve any collisions. Rotate all turrets, including plane, zeppelin and ground turrets. Flak rounds placed last turn explode, inflicting damage. Resolve the attacks of any planes aimed at their targets in a last-ditch effort to inflict damage (see *Plane As A Projectile*, p. 29).

Combat Phase

3. Determine the order in which attacks occur using the pilots' Quick Draw skill.
If the Quick Draw skill is the same for both opponents, roll a die. The pilot with highest result resolves his attacks first. In order of Quick Draw skill, pilots fire weapons first, then all aircraft turrets fire. All zeppelin turrets fire

next, ground turrets fire last.

4. Resolve attacker's weapon fire.

Choose target within arc and range. Announce which weapons will fire. Place delayed-effect weapon counters (flare, flak and sonic missiles) on the map for later resolution. Roll the to-hit dice for each weapon firing.

5. Record damage to target.

The attacker makes a single die roll to determine the damage table to be used for all hits from the attacker's guns. Make this roll individually for each rocket fired. Roll the damage column for each weapon that hits. The target player marks off damage using the damage template. All damage to internal systems takes effect immediately. If the attack hits the canopy, the pilot must immediately make a Constitution roll (see *Shock*, p. 36).

Continue to roll the damage column and mark off damage until all weapon hits are resolved.

Apply the widow damage effects to any unconnected armor or internal locations (see *Widowing Armor and Internal Components*, p. 38).

6. Repeat steps 4 and 5 until all combat is resolved.

7. Resolve non-lethal weapons fire.

All pilots or gunners subject to flare or sonic attacks must make Constitution rolls to avoid shock.

8. Mark off continuing damage.

Mark off damage from magnesium rockets, drill rockets and other weapons that cause continuing damage.

Tailing Phase

9. Establish tailing for next turn.

Use location and facing of plane to determine if tailing situation exists. Compare the Sixth Sense skills of both pilots and account for the target plane smoking to determine how much information the tailing pilot receives about the target pilot's next move.

End of Turn

10. The turn ends.

Begin a new turn at step 1. Repeat the sequence

of play until all enemy aircraft are destroyed or driven from the board or until the mission objectives have been met.

MISSIONS

For most games of *Crimson Skies*, players will simply choose their forces, lay out a mapsheet and start playing. Players who want to add a little more complexity or excitement to the game, however, may agree upon certain conditions or goals that must be met in order to win the game.

Missions can be created to simulate any type of situation, and the missions recounted in *Warriors of the Air* can be used as the basis for any number of variations. Certain conventions and rules of engagement, however, apply to all missions, especially the standard dogfight.

Set-Up

Players choose their forces, pilots and a map. Each team places their planes on opposite sides of the map. This becomes their home side. For maximum playing area, players should set up on the short sides (the "ends") of the map. Pilots may start at any speed equal to or lower than their plane's maximum speed.

Rules of Engagement

These rules are designed to encourage players to save their planes and return them home. The player who gets a kill or two and then bails out or flees is penalized for such a cowardly action. Of course, there are times when fleeing or bailing may be the smart thing to do—but in the eyes of the readers of *Air Action Weekly*, these are not the actions of knights of the air.

Pilots are honor-bound to fly within the engagement area. Leaving the map from any side but their home side is considered fleeing. The fleeing pilot suffers the negative Experience Point award of -20 points to his mission total.

The opposing pilot who gets the last hit on a fleeing aircraft will get credit for half a kill. Half kills are always considered the last kill for pilots with multiple kills per mission. For example, if the pilot has one mission kill under his belt for the engagement and is the last one to inflict damage

on a fleeing plane, and then the engagement ends before he earns any more kills, the fleeing plane is considered to be that pilot's last (second) kill. The attacking pilot would earn half the Experience Points for a second kill, or 20.

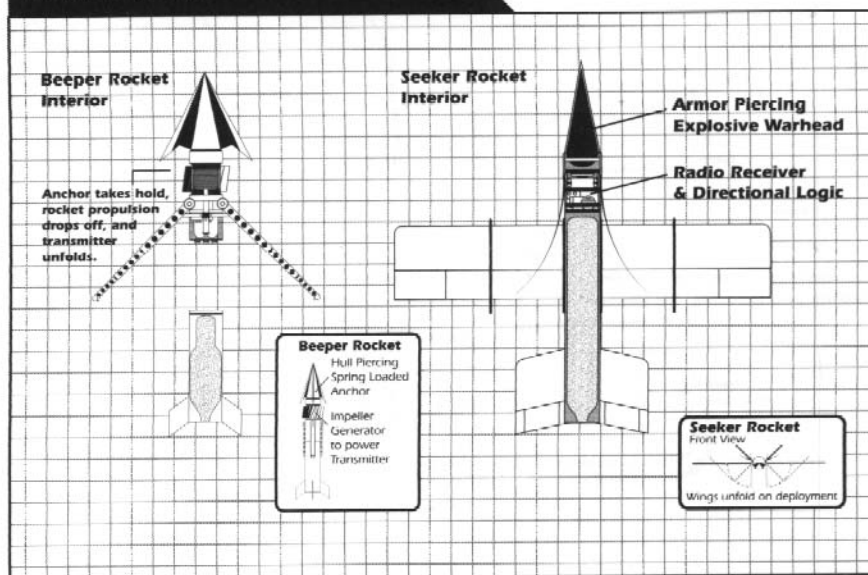
Pilots performing non-combat bailouts also receive a negative Experience Point award of -20 points. Pilots forced into a combat bailout do not suffer this penalty.

Aircraft with internal damage may attempt to withdraw from their home side with no penalty.

Victory

Winning a dogfight mission is a simple matter of shooting down all of the enemy planes or forcing them from the board. If all teams are so shot up that none can continue to pursue the fight, they can declare a draw and honorably withdraw from the engagement area on their home sides.

WEAPON: Beeper & Seeker Rockets





'SCRAMBLE! SCRAMBLE! SCRAMBLE!'

PILOTS AND THEIR PLANES



In *Crimson Skies*, you play a pilot who is part of a militia or a pirate gang. Each pilot has a trusty wingman and a favorite plane. A single player runs a pilot/wingman pair; these two characters are so attuned to each other that they effectively function as one unit, always aware of the other's position and always in position to offer whatever assistance the other needs in flight or combat. A player may run more than one pilot/wingman pair in a game, or several players might each run pilot/wingman pairs belonging to the same militia or pirate group, but a pilot/wingman pair is never separated (each player always plays a pair of planes). The pilot and wingman both stand ready to take a hit for their partner. A wingman who dies can never be replaced, but there are plenty of less-experienced pilots waiting to take their place at the side of an ace. A wingman who loses his lead pilot must step up to the challenge of becoming the hero himself, and take on a wingman of his own.

A pilot's plane is a big part of how he is identified by others and how he sees himself—a slow, steady character with lots of staying power, or a get-in-quick, achieve-the-mission, get-out-quick kind of guy or gal.

PILOTS

A character's skills play an important role in determining the success or failure of specific actions. Each pilot and wingman has five skills, plus Constitution: Quick Draw, Dead Eye, Steady Hand, Natural Touch and Sixth Sense. Players will customize their pilots and wingmen by assigning skill levels to each of these skills. Turret gunners' skill levels depend on the skill levels of the pilot.

In addition to skills, each character should have a name, physical description and personal history. Players should also feel free to create the unit to which their characters belong, whether it is a militia unit or a pirate gang.

Constitution

Constitution is the measure of the character's health and vitality. All characters start with a base Constitution of 3. Pilots/wingmen may increase their Constitution during character creation or a campaign. A pilot suffers the loss of 1 Constitution Point for each wound suffered. A pilot wound is indicated by marking off a Pilot box on the damage diagram (see *Applying Damage*, p. 36). When a character's Constitution drops to 0, he is dead.

A gunner begins the game with a Constitution of 3. This cannot be increased during Character Creation.

Constitution also helps a character resist shock. Any time a character might suffer shock (as a result of a flare rocket, for example), the player must make a Constitution roll against a target number of 10 – the character's current Constitution.

Gunnery Skills

The Gunnery skills are Quick Draw, Dead Eye and Steady Hand. These skills represent how good a character is at aiming and firing a weapon, if he can keep his head under fire and the speed of his reflexes.

Quick Draw

Quick Draw is the measure of the character's quickness and reflexes. This skill determines who shoots first in combat and increases the character's chance of successfully bailing out. This skill represents the reality that a pilot could line up the perfect shot, only to be destroyed by an enemy pilot with a quicker trigger finger before he has the chance to fire. A character with quick reflexes also has a better chance of bailing out of a damaged plane in time to make good his escape.

Optional rule: In order to reduce the number of Quick Draw ties during combat, characters may purchase fractional levels of the Quick Draw skill. In other words, a character can apply Experience Points toward increasing the Quick Draw skill even if he doesn't have enough points to increase the skill by a level.

For example, Joe Condor currently has a Quick Draw of 4 and 25 Experience Points. He needs 40 points to increase the skill to 5, but still chooses to allocate his current 25 points to Quick Draw. His skill is now written as Quick Draw 4/25. In combat, Pilot Condor will fire before anyone with Quick Draw 4 and before anyone with a fractional skill less than his own.

Dead Eye

Dead Eye is the measure of a character's combat accuracy. It is used to positively modify the character's chance to hit his target.

Steady Hand

Steady Hand is the measure of the character's steadiness under pressure. This skill is used to clear jammed guns (see *Clearing A Jammed Gun*, p. 36) and to group hits (see *Determining Column Hit*, p. 37).

Characters with Steady Hand skill levels 6 or above can group their hits by shifting weapon damage by one or two columns in order to concentrate damage in one area. Characters with a skill level of 6 to 8 can shift damage one column. Characters with skill levels of 9 or 10 can shift damage two columns. Steady Hand skill cannot be used to modify the damage of rocket hits.

Piloting Skills

The piloting skills are Natural Touch and Sixth Sense. These skills represent a pilot's affinity for and attunement to his plane, and his ability to guess what will happen next.

Natural Touch

Natural Touch is a measure of the pilot's ability to fly his plane and coax maximum performance from it. Every good pilot sometimes wants to attempt maneuvers the plane was not designed to safely perform. The Natural Touch skill improves the pilot's chances of successfully completing exceptional maneuvers such as exceeding the plane's G-rating or safe speed.

Sixth Sense

Sixth Sense is a measure of the pilot's awareness of his situation. The higher the skill level, the more information a tailing character is able to learn about his opponent's movement, and the less information a tailing opponent will learn about the character's movement. Sixth Sense may also give a character just enough extra information or luck to know just when or how to bail out during combat.

Skill Levels

Each skill is rated from 0 to 10. As the character gains Experience Points by flying missions and earning kills, he or she can spend those points to increase their skills. As a character advances in skill levels, each level is more difficult to achieve than the last.

Creating A Character

A starting character in *Crimson Skies* is considered to be an accomplished pilot and a worthy gunner (otherwise what fun is he or she to play?). The character's wingman is slightly less skilled and less experienced. Your hero receives a total of 450 Experience Points to divide among the five skill categories, and your wingman receives a total of 350 points for his or her skills. Players do not play gunners. The Skill Cost Table shows the Experience Points cost for each level of skill. All characters begin the game with a Constitution of 3. Players may increase pilot or wingman Constitution at character creation by paying the cost for the increase according to the *Improving Skill Levels Table*, p. 20.

Players may choose to have their characters specialize in certain skills to improve certain abilities. In order to increase one skill, for example, you may choose to dramatically lower another skill. You may even choose to assign 0 Experience Points to a skill, but all skills are important and your character might not live to regret that choice.

Any points not used during character creation are saved and can be used for future skill improvements.

You might also choose to create your character as a jack of all trades and master of none. Because your lead pilot and wingman work together as a team, however, you should try to balance their skills to complement each other's strengths and weaknesses.

A gunner only has three skills and Constitution. To create statistics for a gunner, simply subtract one level from the pilot's skill level in Quick Draw, Dead Eye and Steady Hand. A gunner has a Constitution of 3.

SKILL COST TABLE

Skill Level	Experience Points
0	0
1	10
2	20
3	40
4	70
5	110
6	160
7	220
8	290
9	370
10	460

EXPERIENCE POINTS TABLE

Action	Experience Points
For surviving the engagement; pilot must inflict damage on the enemy to earn these points	20
For the first kill in the engagement	20
For the second kill in the engagement	40
For the third kill in the engagement	60
For every kill over three in the engagement	80
For landing successfully or returning to zeppelin	10
For rescuing a memento from the cockpit when bailing out (Combat bail-out only)	5
For rescuing the cargo when bailing out (Combat bail-out only)	10
For performing a non-combat bailout	-20
For fleeing the engagement	-20

Character Advancement

One of the goals of *Crimson Skies*, of course, is to live through your missions so that you can learn from them and do even better in your next dogfight. Pilots earn Experience Points for various actions during a mission, as shown in the Experience Points Table, p. 19. These points are awarded at the completion of a mission, usually considered to be achieving (or failing to achieve) the objective and landing the plane. The Experience Points can be spent at once, and any skill level increase takes effect immediately and is available for the next mission. The Improving Skill Levels Table shows the Experience Points cost for increasing skill levels. To increase your skill by one level, pay the number of Experience Points for your current skill level. For example, to increase your Dead Eye skill from 3 to 4 costs 30 Experience Points.

IMPROVING SKILL LEVELS TABLE

Skill Level	Experience Points to increase 1 level
0	10
1	10
2	20
3	30
4	40
5	50
6	60
7	70
8	80
9	90
10	—

Pilot Heather "Ivy" Iverian has returned from a successful mission. She managed to get two kills and return safely. She earns 20 points for surviving the engagement and inflicting damage to the enemy. She earns 20 points for the first kill and 40 more for the second. Pilot Iverian also earns 10 points for returning the aircraft home. This totals 90 points, which can now be spent on skill improvement. Ivy Iverian chooses to increase her Steady Hand skill from 5 to 6 at a cost of 50 points, and her Sixth Sense skill from 4 to 5 at a cost of 40 points.

AIRCRAFT STATISTICS

While the characters are the heroes and heroines of this tale, the planes get most of the screen time. The selection of planes included in this game offers a variety of styles of play that allows all players a chance to find their personal favorites. Players can create a winning strategy with a wide range of different planes.

Each of the following ratings may decrease as a result of damage suffered during a mission, and all ratings may be temporarily exceeded by pushing the envelope of the plane.

A plane's left and right sides are also referred to as port and starboard, respectively. When looking toward the front of the plane from the cockpit, port is on the pilot's left and starboard is on the pilot's right.

Maximum Speed

The Maximum Speed is the number of hexes the plane may safely move each turn without pushing the engine. Ratings range from 1 to 5. If the plane's Maximum Speed is reduced to 0 due to damage, the engine is destroyed and the plane will glide until it crashes. See the *Engine Destroyed* rules, p. 39, for all the gory details.

Maximum Gs

Maximum Gs represents the G-rating that the plane may pull in any single maneuver without stressing the airframe. Each wing has a separate maximum G rating ranging from 0 to 5. A rating of 0 allows the pilot to make only gentle turns.

Acceleration

Acceleration is the maximum safe increase in speed from turn to turn. Ratings range from 1 to 3. If acceleration drops to 0 as a result of damage, the plane may only increase its speed by redlining the engine.

Deceleration

Deceleration is the maximum safe decrease in speed from turn to turn. All planes have a decrease rating of 2 and may exceed this rating by attempting a stall. Damage to the flaps will reduce deceleration.

Base To-Hit Number

The plane's base to-hit number is a measure of its relative size and inherent maneuverability. Fighter to-hit numbers range from 1 to 10, with 10 representing the smallest and most maneuverable planes and 1 representing the largest and least maneuverable aircraft. See Object Target Number Table, p. 27.

Armor

Armor is the material added to the plane to protect the critical components. The more armor an aircraft carries, the less room is available for other equipment.

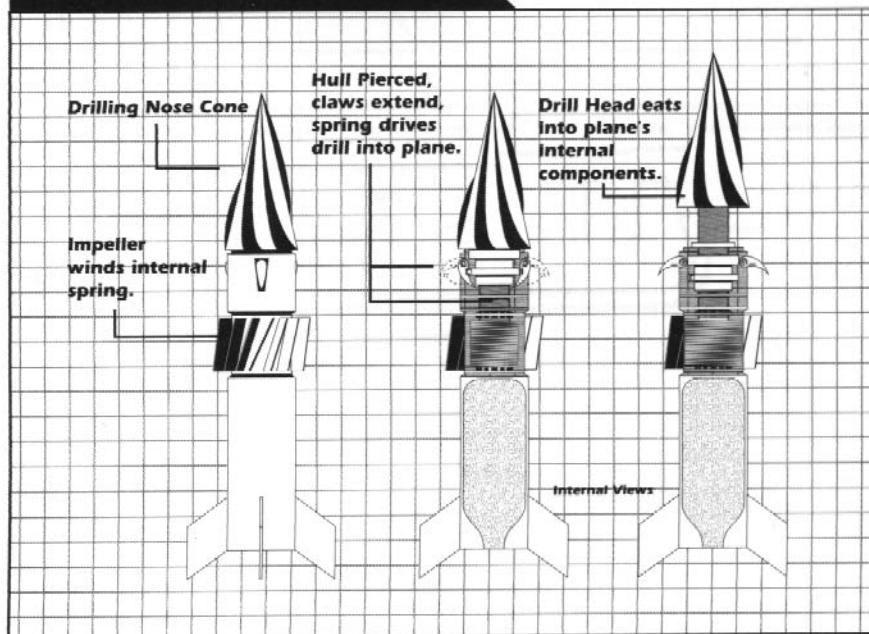
Guns

Machine guns and cannons are the main armaments of aircraft in *Crimson Skies*. They range in size from 30-caliber to 70-caliber and can carry armor piercing, dum-dum and magnesium ammunition.

Other Ordnance

Most aircraft carry wing hardpoints for rockets and bombs. *Crimson Skies* offers a wide variety of both rockets and bombs, including the lethal armor-piercing and high-explosive, the exotic drill rocket and beeper-and-seeker combination, and the non-lethal flare and sonic rockets. Aircraft suffer no penalty for carrying a full load of rockets and/or bombs.

WEAPON: Drill Rocket





LESSON 1: PUSH FORWARD TO GO DOWN, PULL BACK TO GO UP

LESSON 2: THE IMMELMANN

MOVEMENT



Movement in *Crimson Skies* is simultaneous. All players plot their move for the current turn and note it on the plane's record sheet, concealing their planned move from the other players. All players reveal their moves simultaneously and place their planes in the designated hex and position.

PLOTTING A MOVE

To plot a move, simply position the maneuver template so that it is oriented in the same direction as the plane is facing on the map and choose the desired destination hex. The hex in the center of the first hexrow containing the plane and letters A through F represents the position of your plane on the map. For purposes of plotting your move, your plane is always at facing A.

In order to record a legal move, you must indicate the hex designation, a facing and the maneuver Gs. The hex designation consists of two numbers and a letter. The first number is the speed required to reach that hex. The letter, either L, R or S, describes the direction of the move; left, right or straight. The second number is the number of the hexrow. The facing must be a letter from A to

F. The maneuver Gs are represented by the bars following the arrowhead in the destination hex.

Legal moves and end positions are illustrated with arrowheads. The pilot must be able to trace a path of arrows to his destination hex. If there is no arrowhead shown for the hex and facing combination desired, the plane cannot move to that end position in a single turn.

For example, Pilot Condor wants to move forward 1 hex, turn left and move 2 hexes straight. This is a 3L2F maneuver. 3L designates the hex and F designates the final facing. This move is rated at 1 G.

Each plane has different maneuver capabilities. To determine if a plane can make a specific maneuver, first compare the first number of the destination hex (the speed of the maneuver) to the Max Speed of the plane. Then compare the number of bars behind the facing arrow of the destination hex to the G rating of the wing of the turn (L or R). Only the G rating of the plane's destination hex counts as the G rating of the maneuver. The hexes traveled through for the maneuver have

no impact on the G rating of the maneuver. If any hex of the plotted maneuver crosses a hex containing a non-piloted object (a building, the engines of a zeppelin and so on), the pilot must make a collision check (see *Collisions*, p. 27). You cannot, however, simply jink around an object in a single turn. To reflect this, you may not make a left or right maneuver and end with a straight maneuver in a single turn.

For example, in Diagram A, Pilot Iverian plans to perform a 3SA maneuver. However, there is a one-hex building directly in front of her plane. Pilot Iverian cannot make this maneuver in one turn, as it would mix a left and then a straight maneuver. She may instead perform a 2L2A on this turn, and a 2R2A on her next turn.

Pilot Iverian may instead want to perform a 4L2 maneuver as shown in Diagram B. She must travel through Hex 3L2, because that is the only path by which she can reach her destination hex. If Hex 3L2 was blocked, she would have to risk a collision with that object or choose another destination.

Aircraft can safely increase their speed from one turn to the next by an amount equal to their Acceleration Rating. They can safely decrease their speed by their Deceleration Rating. To determine if the plane can safely make the maneuver, compare the speed of the previous turn's maneuver to the speed of the plotted maneuver.

If the plane exceeds any of its capabilities in order to execute a maneuver, the pilot is consid-

ered to be pushing the envelope. Circle the Push box on the turn record of the record sheet and consult the *Pushing the Envelope* rules on p. 25.

Stalling the Plane

A pilot may stall his plane at any time by decelerating or pushing to a speed of 0. The plane remains in the same hex, but may rotate facing to one of the three valid directions indicated by the arrowheads. A plane may only stall for one turn; the next turn it must move forward again to avoid plummeting to earth. This movement order is indicated by writing only the facing letter on the turn record. A stall is considered a 0 G maneuver.

Restricted Maneuvers

All maneuvers of 3 or more Gs are restricted. They can only safely be performed following a 2 G, 1 G or 0 G maneuver. If the pilot needs to use two restricted maneuvers in a row in order to achieve his goal, he or she must push the envelope (see *Pushing the Envelope*, p. 25).

MOVEMENT RESOLUTION

When all players have plotted their moves, movement is resolved. Move all aircraft not pushing the envelope to their plotted destinations. Players pushing their planes must announce which rating they are pushing and the die roll required for them to succeed at the maneuver, then roll the appropriate dice and take the actions indicated.

If a player has recorded an illegal move, then the plane will move randomly at the speed of the recorded move. See *Random Movement*, p. 26.

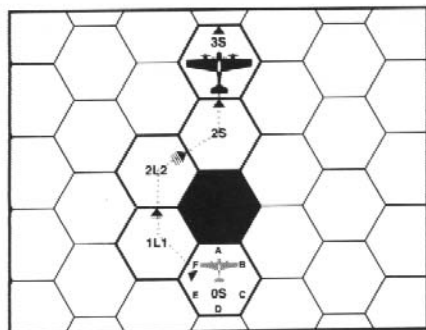


Diagram A

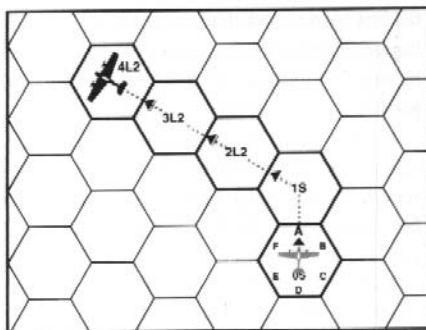


Diagram B

Pushing the Envelope

Sooner or later, every pilot will want to push his plane beyond its performance specs. The rules for pushing the envelope allow characters to attempt such maneuvers. Success means the pilot has achieved a spectacular maneuver. Failure results in damage, and perhaps other consequences.

The target number for pushing the envelope is $8 + (\text{amount over rating}) - \text{Natural Touch Skill}$.

Each type of push is described below.

Pushing the Gs

If the pilot wants to perform a maneuver with a higher G rating than the current maximum of the wing in the direction of the turn (each wing has a separate maximum G rating), the pilot is Pushing the Gs. Planes pushing the Gs should move last, because they may move randomly.

The target number for pushing the Gs is $8 (\text{base target number}) + (\text{Maneuver Gs over current maximum}) - \text{Natural Touch skill} + 2 (\text{if pilot is shocked})$.

A pilot pushing the Gs in a straight maneuver is attempting an Immelmann (1SD). For this maneuver, the safe G rating of the aircraft is the weaker or lower-rated wing. For example, if a plane had a G rating of 3 on the port wing and 2 on the starboard wing, the plane would be rated at 2 Gs for this maneuver. A pilot suffering from shock may not make an Immelmann maneuver.

If the roll is a success, the maneuver went smoothly as plotted. If the roll is a failure, the plane will move randomly (see *Random Movement*, p. 26).

For example, a plane is currently limited to 2 Gs for starboard turns and 3 Gs for port turns. The pilot's Natural Touch skill is 5. The pilot wants to attempt a 3L3B maneuver, which is rated at 4 Gs, 1 G greater than the plane's rating of 3. The target number is $(8 + 1 - 5 = 4)$. If the pilot chose to execute a 3R3F maneuver, the target number would be $(8 + 2 - 5 = 5)$.

Restricted Maneuvers: In flying, a high-G maneuver bleeds off speed from an aircraft. In order to execute a high-G maneuver, a pilot nor-

mally builds up to the desired maneuver by performing one or more lower-G maneuvers to increase his speed. Any maneuver 3 Gs or greater is considered a high-G maneuver. If a pilot attempts two 3 G or higher maneuvers in a row, the pilot must make a Pushing the Gs roll for the second maneuver. The target number for a second restricted maneuver is $8 (\text{base target number}) + (\text{G rating of second maneuver}) - \text{Natural Touch skill} + 2 (\text{if pilot is shocked})$.

If the roll is a success, the maneuver went smoothly as plotted. If the roll is a failure, the plane will move randomly.

Redlining the Engine

If the pilot wants to exceed his aircraft's maximum acceleration or push his top speed, he is attempting to redline the engine. Success means he achieves the new speed; failure will result in an engine flareout. If a pilot is attempting to exceed the maximum acceleration and push his top speed, he must roll for both maneuvers and must succeed at both in order for either to succeed.

The target number for exceeding the maximum acceleration is $8 (\text{base target number}) + (\text{required acceleration over current maximum}) - \text{Natural Touch skill} + 2 (\text{if pilot is shocked})$.

The target number for pushing the aircraft's top speed is $8 (\text{base target number}) + (\text{desired speed over current maximum}) - \text{Natural Touch skill} + 2 (\text{if pilot is shocked})$.

For either maneuver, if the roll succeeds, the plane maneuvers normally.

If the roll fails, the plane's engines will flare out. A flareout causes the plane's speed to immediately drop to 1 and its engine to smoke for the current turn and the next turn, and the plane suffers one hit of fracture damage to the nose for each point of attempted acceleration or top speed over the plane's current maximum (see *Applying Damage*, p. 36 and damage template). Rather than making the plotted maneuver, the plane will move forward one hex with no facing change allowed.

The plane and its engine will perform normally the next turn.

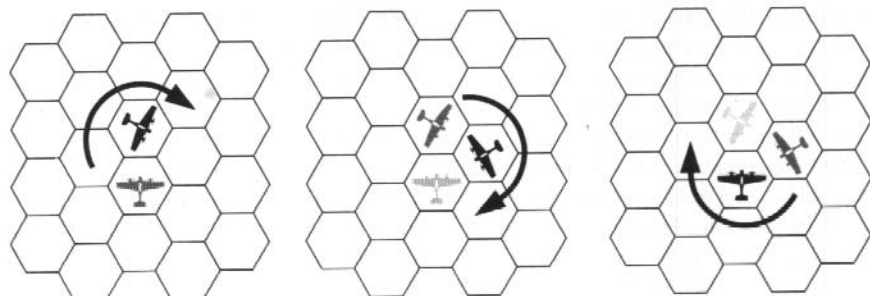


Diagram: Example Random Movement Sequence

Stalling the Plane

If the pilot wants to exceed his aircraft's maximum deceleration, he must attempt to stall the plane. The plane will end its movement in the destination hex regardless of whether the maneuver succeeds or fails. A failed maneuver, however, causes damage to the wings. If the roll fails, each wing will take one hit of fracture damage (see *Applying Damage*, p. 36 and damage template) to its leading edge for each point of required deceleration over the current maximum.

The target number for stalling the plane is 8 (base target number) + (required deceleration over current maximum) - Natural Touch skill + 2 (if pilot is shocked).

Random Movement

A failed Pushing the Envelope roll is the most common reason for random movement. To resolve random movement, use the following procedure.

For each point of speed of the failed maneuver, the plane must move forward one hex. For each new hex entered, roll a die and consult the Facing Change Table.

For each hex face change made during the ran-

dom movement, the plane suffers fracture damage to the leading edge of the outside wing of the random turn (the port wing for starboard turns; the starboard wing for port turns).

For example, Pilot Condor attempted a 3R0D maneuver. This pushed the Gs by 2, and he failed the saving roll. He must now move randomly. The speed of the attempted maneuver was 3, so Pilot Condor must move three hexes. First, he moves straight one hex and rolls the die to see how many hexsides he must rotate. He rolls a 10, and so must turn 2 hexsides to the right, because the failed maneuver was a right-hand turn. Pilot Condor now moves forward another hex and makes his second die roll. This time he rolls a 9 and must turn another 2 hexsides to the right. Pilot Condor now moves forward for his third hex and rolls again. This time he rolls an 8 and must make another 2-hexside rotation. Pilot Condor's random movement is now complete—he's right back where he started. Because he was forced to make six hexside rotations during his random movement, he must take 6 fracture damage bits to his port wing.

RANDOM MOVEMENT FACING CHANGE TABLE

Die Roll Result	Facing Change
1-3	No facing change
4-7	Plane rotates 1 hex side in the direction of the failed maneuver*
8-10	Plane rotates 2 hex sides in the direction of the failed maneuver*

* For a straight maneuver, roll a die. On an even number, the plane will rotate to the right; on an odd number, the plane will rotate to the left.

COLLISIONS

Random movement, poor piloting or chance may result in more than one plane sharing a hex, or a plane sharing a hex with a non-piloted object.

The Object Target Number Table suggests base target numbers for planes and non-piloted objects. All players should agree on the base target numbers to be used in their game before beginning play.

When teammates can communicate via radio, they can avoid collisions. But if a radio is damaged, or an enemy plane or some other object shares the hex, all aircraft must check for collisions.

Piloted Objects

If more than one enemy or radio-damaged plane ends its movement in the same hex, each pilot must choose a number between 1 and 10. Players may choose a number by hiding a die behind their hands and placing a number face up, or use any other method all players agree on. The chosen numbers are revealed simultaneously. If any planes have the same number, they have collided.

When teammates must check for collision, they must roll a die rather than choosing a number.

Pilots/Wingmen: Lead pilots and their wingmen are the exception to the above rules; because of their unique relationship, it is impossible for a pilot and his wingman to collide with each other.

Non-Piloted Objects

If a pilot finds himself in the same hex as a non-piloted object such as a zeppelin engine pod or a building, he must roll to avoid colliding with the object. The target number to avoid collision is 10

– (object's base target number).

If the roll succeeds, the pilot successfully avoided the object. If the roll is a failure, the pilot has collided with the object and the pilot must eject to save his life.

For example, a zeppelin engine nacelle is a small object, so it has a Base Target Number of 7. If a plane ends its movement in the same hex as the engine nacelle, the pilot must roll equal to or higher than 3 to avoid crashing into the engine. A building is a very large object with a Base Target Number of 1, so the player must roll a 9 or higher to avoid the building.

Damage from Collisions

Any aircraft involved in a mid-air collision is considered destroyed, and the pilot and/or gunner must bail out to survive.

Optional rule: If all players agree at the beginning of the mission, collisions can inflict damage as flak attacks instead of instant destruction. In this case, subtract the object's base to-hit number from 14. The result equals the number of flak attacks worth of damage the collision causes. Roll a damage location for each flak attack based on the angle of the collision.

For example, Ivy Iverian, in a plane with a Base Target Number of 7, collides with her nemesis, Joe "Badboy" Dukes, who is piloting a plane with a Base Target Number of 4. Iverian's plane will suffer collision damage of $14 - 4 = 10$ flak damage hits. Badboy Dukes' plane will suffer $14 - 7 = 7$ flak hits for his collision damage. The location of each flak hit would be determined by rolling on the appropriate Hit

OBJECT TARGET NUMBER TABLE

Object	Suggested Target Number
Planes	1–10
Small planes have high target numbers, large planes have low target numbers	
Zeppelin engine nacelle; other stable, small objects	7
Trains; large objects with predictable movement	3
Buildings; large, immobile or slow-moving objects	1

Location Table. Based on their facings, in this collision, Iverian takes damage on the Nose table and Dukes takes damage on the Port Front table.

TAILING

Position is everything in a dogfight, and getting into a tailing position can be of critical importance. A tailing aircraft has the advantage of aiming at a target with low relative motion (or angular velocity), and can better anticipate his target's movement.

In order for one pilot to tail another, both planes must be facing the same direction, the following plane must have the leading plane in its front arc AND the following plane must be in the leading plane's rear arc and the planes must be within 3 hexes of one another. If two planes are in the same hex, the slower plane is considered to be behind the faster plane and so is in a tailing position. A shocked pilot may not tail.

If all conditions are met for tailing, then the pilots' relative skills and certain other modifiers determine how much information the tailing pilot will learn about the leading pilot's plotted movement. The tailing pilot determines how much information he will receive by calculating the Tailing Number, using the following formula: Tailing Pilot's Sixth Sense skill - Target Pilot's Sixth Sense skill + 2 (if target plane is smoking) + 2 (if target pilot is shocked).

If the Tailing Number is less than 0, the target pilot must reveal the direction of his maneuver; Left, Right or Straight.

If the Tailing Number is equal to or greater than 0 and less than 3, the target pilot must reveal the direction of his maneuver and his speed.

If the Tailing Number is equal to or greater than 3, the target pilot must reveal his destination hex (which includes the direction and speed), but not his final facing.

In Diagram B, Ivy Iverian is in Badboy Dukes' rear arc and within 3 hexes of his plane, but does not have Dukes in her front arc, so she is not in a tailing position. The second diagram shows that in the next turn, all conditions for

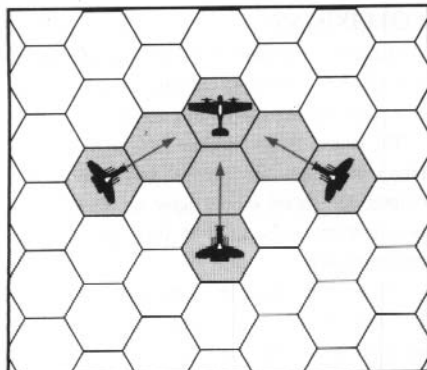


Diagram A: Valid tailing positions

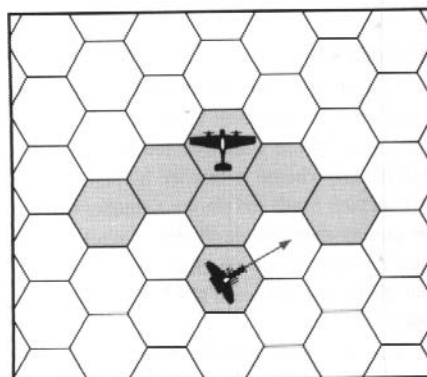


Diagram B: No tailing opportunity

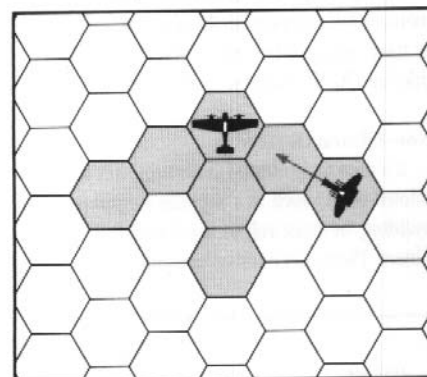


Diagram C: Valid tailing position

tailing are met and Dukes must reveal maneuver information for his next move.

Iverian now calculates her Tailing Number. Iverian's Sixth Sense skill is 5, Dukes' is 6. The tailing number would be $5 - 6 = -1$. Badboy is

planning to do a 4L3C maneuver, and would have to tell Iverian he was going left.

If Dukes' plane was smoking, the Tailing Number becomes $5 - 6 + 2 = 1$. Now Badboy has to tell Iry Iverian both his speed (4) and direction (left). If Badboy was also shocked, the tailing number becomes $5 - 6 + 2 + 2 = 3$. Now he must reveal his destination hex, which is 4L3. He does not have to reveal his final facing.

BAILING OUT

A pilot can bail out safely if he or she plans to do so. When plotting movement, a player may write "Bail" and a valid speed in the turn record. When movement is resolved, the pilot has successfully bailed out and lands safely; the plane will continue forward in a straight maneuver at the speed plotted. The plane is removed from play at the beginning of the next Movement Phase unless it is being used as a projectile to attack a target (see *Plane As A Projectile*). The pilot gets no Experience Points for a safe bailout.

Plane As A Projectile

When bailing out during a Movement Phase the player may "aim" his or her aircraft at a target in a last act of vengeance. But as with most things in

life, vengeance takes planning. The longer the pilot steers the plane at the target, the better the chance of it actually hitting the target. And of course, large, slow-moving objects are easier to hit than small fast ones.

When using his plane as a projectile, the player must plot an SA move as when bailing out. If, at the end of the Movement Phase in which the pilot intends to bail out, the abandoned plane is in the same hex as its target, it has a chance of hitting the target. The target number for hitting a target with a plane is (target's base to-hit number) + (attacking plane's base to-hit number) - (number of hexes moved straight at the target; this may be over several turns).

For example, a pilot's plane has a magnesium round burning its way toward a fuel tank. He has only three turns to live, so he points his aircraft at the enemy zeppelin's engine nacelle and rides it out to the last moment. The target number for determining if the attack is successful equals (his plane's base target number 6) + (the engine nacelle's base target number 7) - (the pilot stayed on target for 3 turns, moving 2 hexes each turn); so $6 + 7 - 6 = 7$.

COMBAT BAILOUT TABLE

Situation	Base Target Number
Fuel tank explosion	20
Mid-air collision	18
Fuselage "cored"	16
Wing sheared off	14
Engine destroyed	12
Modifiers	
If bailing out while suffering from shock	+2
For each previous combat bailout	-1 per bailout (maximum 4)
For attempting to rescue special momento from cockpit (for example, photo of girlfriend/boyfriend)	+1
For attempting to rescue contents of cargo area, including faithful dog	+3
	- Sixth Sense skill
	- Quick Draw skill

LANDING MODIFIERS TABLE

Situation	Modifier
If any of the required landing gear is damaged	+3
If either rudder is damaged	+2
If both rudder controls are damaged	+3
If not on surfaced road or runway	+2
If either of the flaps are damaged	+1
Per pilot wound	+1

GROUND LANDING TABLE

<i>Die Roll Result</i>	<i>Landing Mishap</i>
5+	Plane flips and is destroyed. Pilot loses 2 points of Constitution.
3-4	Plane grinds into the ground; the wings and all components in the wings are destroyed. Pilot loses 1 point of Constitution.
1-2	Plane noses down and skids to a stop. All nose weapons are destroyed and the engine is damaged.
0	Plane lands safely

ZEPPELIN LANDING TABLE

<i>Die Roll Result</i>	<i>Landing Mishap</i>
5+	Plane crashes into zeppelin, destroying the plane and ripping open one of the zeppelin's helium cells. Pilot must bail out using a base target number of 14 (see <i>Combat Bailout</i> , p. 31).
3-4	Plane crashes into the zeppelin, ripping off both wings and coming to rest inside the airship. All wing weapons and components are destroyed. Pilot loses 1 point of Constitution.
1-2	Plane slams into zeppelin landing structure, destroying the plane's nose. All nose weapons and the plane's engine are destroyed.
0	Plane lands safely.

Damage

If the plane hits the target, it will inflict a great deal of damage, represented as a number of hits as from a flak rocket. To determine the number of "flak" hits, subtract the plane's base target number from 14; for example, if your fighter has a Base Target Number of 6, it would inflict 8 hits to the target. Non-piloted objects take a number of points of damage equal to the damage template of the attack (see *Gas Cells*, p. 46).

Combat Bailout

If a plane is destroyed, the pilot may try to escape the wreckage, but a combat bailout is far from safe. Use the Combat Bailout Table to determine the target number for making a successful combat bailout. A successful die roll result means the pilot escaped safely. A failure means the pilot goes down with the ship. The modified target number for successfully bailing out is (base target number of situation) +/- (appropriate modifiers) - (Sixth Sense skill) - (Quick Draw skill).

For example, Nathan Lucas's wing is sheared off while he is in shock from a sonic rocket, but he insists on rescuing the picture of Mabel, his sweetheart. The calculation to successfully hit the silk is Base Target Number 14 (wing sheared off) + 2 (shocked) + 1 (rescuing momento) - 5 (Sixth Sense) - 6 (Quick Draw) = 6.

LANDING

Once the engagement is over, the survivors return home and attempt to land either on the ground or on the squadron's zeppelin. Landing on

the ground is a fairly straightforward proposition. Landing on a zeppelin requires more skill. To land on a zeppelin, a plane must fly under the airship and attempt to catch the landing gear on top of his plane (essentially a big eye for a hook) on the fighter landing hook of the zeppelin. Cables that narrow to a V at the landing hook guide the plane's landing gear to a rail, where the zeppelin's landing gear can catch the eye. Once attached to the landing cable, the fighter is rotated into the zeppelin's cargo hold.

The target number for a successful landing is 4 + (appropriate modifiers from Landing Modifiers Table) - Natural Touch skill.

If the target number is equal to or less than 0, the landing is automatically considered a success and no die roll is required. A pilot with a Natural Touch skill of 3 or less must always make a roll to land. A plane with any type of damage must make a roll to land—even the most skilled pilot may wreck an already damaged aircraft.

A successful roll means the pilot has landed the plane safely. A failed roll means some mishap has occurred on landing. To determine what happened to a plane on an unsuccessful landing, subtract the die roll result of the landing roll from the target number for that roll and consult the the appropriate landing table.



'SAY! THAT IS A BIG GUN!'

COMBAT



The destruction of the enemy is the main goal of *Crimson Skies*. The following rules describe how to find and hit a target, inflict damage and ultimately shoot down enemy aircraft.

MAKING AN ATTACK

In a single combat round, the pilot/gunner may choose to fire any or all of either his machine guns and cannons or the launched weapons (rockets and bombs) under his control. If the pilot/gunner chooses to fire machine guns, he may fire any and/or all of his guns at a single target.

If the pilot/gunner chooses to fire his launched weapons, he can mix and match his attack. He may fire any and/or all of his lethal rockets or bombs at a single target. He can fire any and/or all of his non-lethal rockets or bombs at any number of target hexes, or he can do both. See *Deployed Weapons*, p. 41.

What Is A Valid Target?

A pilot may attempt to shoot any target in the hex column directly in front of his aircraft to the limit of his weapon ranges (see *Weapons*, p. 40). Targets to the left and right of this column cannot

be targeted by a direct attack. Any object that blocks movement also blocks weapons fire. Planes and small airborne objects do not block weapons fire.

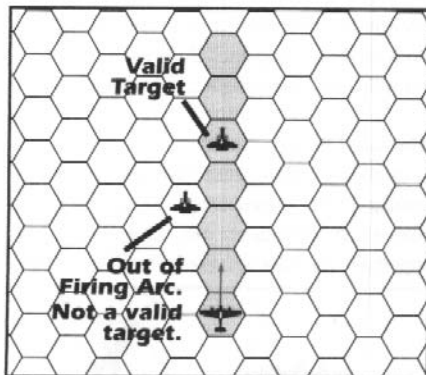


Diagram: Forward firing arc

Certain circumstances must exist for two planes in the same hex to be able to fire at each other. If they face each other head-on, they may each fire. If they are facing the same direction, the slower plane may fire at the faster. No other orientation offers a valid target for two planes in the same hex.

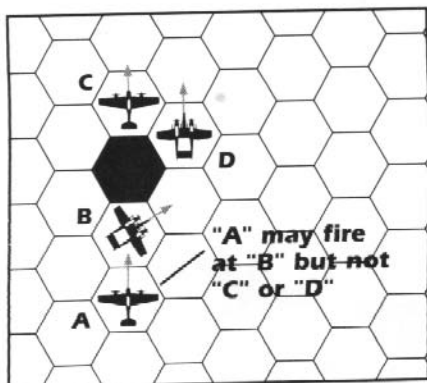


Diagram: Obstructed and unobstructed firing arcs

If both planes are facing the same direction and are going the same speed, the pilot with the higher Natural Touch skill can fire at the tail of the other plane. If the pilots have equal Natural Touch skills, neither can take a shot at the other; the pilots may salute each other or make other gestures.

Planes cannot fly through certain hexes because of terrain features, buildings or other objects. These hexes are marked by a dot in the center of the hex. When checking for line of sight, simply lay a straightedge between the center of the two hexes in question. If the straightedge passes through any hex with a dot, line of sight is blocked. If the line passes along the hexside of a hex with a dot, line of sight is not blocked.

Who Goes First?

Unlike the simultaneous Movement Phase, the Combat Phase is sequential. Because damage takes effect immediately, who fires first is very important. The pilot with the highest Quick Draw

skill resolves his combat first. If using the optional Quick Draw rule (p. 18), remember to count any Experience Points allocated to the skill. In the case of a tie, each player rolls a die, and the player with the highest result goes first.

Each pilot should resolve all of his combat before the next pilot resolves his or her combat. After all pilots have resolved their combat, all aircraft turrets resolve their combat, followed by all zeppelin turrets and all ground-based turrets. All these attacks are resolved in order of highest Quick Draw skill to lowest.

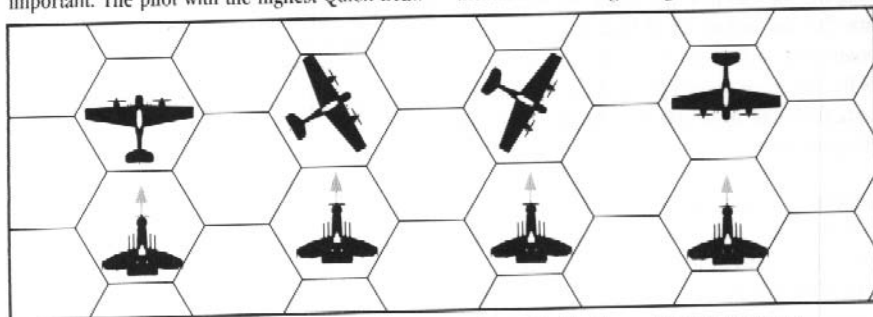
For example, Ivy Iverian and Badboy Dukes have each other in their gunsights in a head-on attack at a range of 2 hexes. Iverian has a Quick Draw skill of 4. Badboy also has a Quick Draw skill of 4. Because their skills are tied, the players each roll a die to see who goes first. Ivy rolls a 7 and Badboy rolls a 2, therefore Ivy Iverian has the first shot.

If using the optional Quick Draw rule, Iverian has a Quick Draw skill of 4/25. Dukes has a Quick Draw skill of 4/30. In this case, Badboy Dukes has the higher skill and gets the first shot.

Attack Procedure

Use the to-hit rules to determine the total number of hits. See *Determining A Hit*, p. 35.

Make one roll and consult the Hit Location Table to determine where all machine gun hits will fall, or make one roll for each individual rocket to determine where it will hit. Each roll on the Hit Location Table refers to a specific damage table on the aircraft damage diagram. See *Determining*



Deflection Modifier 0

Deflection Modifier 1

Deflection Modifier 3

Deflection Modifier 2

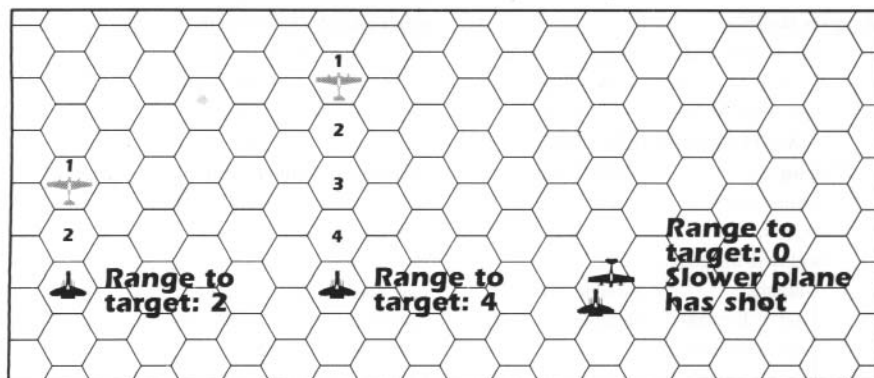


Diagram: Range modifiers

Damage Location, p. 36.

Roll a die to determine the column number on the damage table where the shot hits. This result also determines where to lay the damage template. See *Applying Damage*, p. 36.

Determining A Hit

All combat follows the same procedure. The attacking player must roll greater than or equal to the final to-hit number for each weapon fired in order to hit. A roll of less than the final to-hit number is a miss. The to-hit number consists of a base number for the target's plane and the appropriate modifiers, as described below.

The to-hit number is equal to (target's base to-hit number) + (deflection modifier) + (range modifier) - (pilot/gunner Dead Eye skill) + (weapon modifier) + (shock modifier).

Target's Base To-Hit Number

Every target has a base to-hit number. For the filled-out record sheets included in this boxed game, this number is printed on the record sheet for each plane. This number represents the target's size and maneuverability, and ranges from 1-10. The higher the base to-hit number, the more difficult the target is to hit. See the suggested object target numbers in *Collisions*, p. 27. See also the construction system, p. 63 in AAW's *1937 Aircraft Review*.

Deflection Modifier

The angle of attack is important in air-to-air

combat. The most accurate shots are those with the least amount of relative motion. In other words, flying right behind a target offers the best shot, while flying at an approaching off-angle is the worst. Each angle of deflection requires a modifier, as shown in the Deflection Modifier Table.

DEFLECTION MODIFIER TABLE

Angle of Attack	Modifier
Directly behind (both planes facing same direction)	0
Rear arc, 1 hexside left or right off center	+1
Nose to Nose	+2
Front arc, 1 hexside left or right off center	+3

Range Modifier

The range modifier is +1 for each hex to the target. Count the hexes between the planes, starting with and including the hex occupied by the target plane, but not including the hex occupied by the attacking plane. A target in the same hex has a range modifier of 0.

Dead Eye Skill Modifier

Subtract the Gunner's Dead Eye skill from the running total of the to-hit number.

Weapon Modifier

Certain weapon classes require to-hit modifiers, as shown on the Weapon Modifiers Table.

WEAPON MODIFIERS TABLE

Weapon	To-Hit Modifier
Machine Guns	0
Rockets	+1
Deployed Weapons	
Bombs	Variable; see p. 44
Aerial Torpedo	Variable; see p. 45
Harpoon Rocket	+2

Shock

If the pilot/gunner is shocked, he suffers an additional +2 to-hit modifier to all actions.

A pilot may suffer shock from various events, including canopy hits, flare rockets, sonic blasts and wounds. Whenever there is a chance that a pilot/gunner will suffer shock, he or she must make a Constitution roll. The target number for avoiding shock is 10 - (character's current Constitution) + 2 (if already in shock).

If the player rolls above or equal to the target number, the pilot retains control of the airplane. If the roll result is a miss, then the pilot goes into screaming shock and the plane must make a straight maneuver next turn, not including the Immelmann (ISD).

For example, Ivy Iverian has lined up a machine-gun shot on Badboy Dukes. The to-hit calculation is as follows:

4 (target's base to-hit number) + 2 (deflection for a nose-to-nose shot) + 2 (range of 2 hexes) - 6 (Iverian's Dead Eye skill) = 2.

Doubling Down

If a pilot has a good shot or nothing left to lose, he or she may elect to "double down" on his machine guns. This allows the player to roll two to-hit rolls for each machine gun he chooses to fire in this manner. While this means that he may do double damage with each weapon, there is also a chance that the guns will jam. If either of the two shots misses, then the gun will be jammed. The

player takes both shots in the turn, even if the first shot jammed. The gun will be jammed starting the next turn until successfully cleared. Note jammed guns on the record sheet.

Clearing A Jammed Gun

Once a gun is jammed, it may not be fired until it is cleared. A player may attempt to clear all jammed guns in each turn, but this action is the only one the pilot or gunner can take during the Combat Phase. A character clearing a jammed gun cannot make an attack.

To clear a jammed gun, the player must roll against a target number of 8 - the character's Steady Hand skill.

Determining Damage Location

To determine which area of the plane an attack hits, the player must roll on the Hit Location Table, as shown on the reference sheet. Make this roll only once per attacking plane when using machine guns. Make this roll for each individual rocket hit.

Use the table that represents the attacking plane's attitude toward the target plane. For example, if the attacking plane is taking a shot at the target plane's left (port) side, against the leading edge of the wing, use the Port Leading Table. The die roll indicates in which section of the target's damage table the player must mark off the damage.

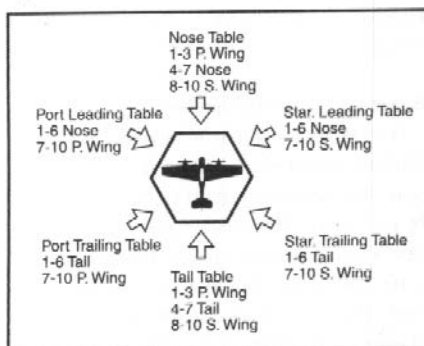


Diagram: Hit Location Table

Applying Damage

The core of the *Crimson Skies* damage system is the integrated damage table. This single table

shows both the status of the aircraft's armor and the condition of all the machinery required to keep it in the air and fighting.

Players can use various strategies to apply damage. In general, the order in which damage is resolved can have a significant impact on the destruction inflicted on the target. For example, you may want to resolve armor-piercing (AP) hits first in order to provide deep holes for high-explosive (HE), dum-dum (DD) and magnesium (MG) hits to penetrate. You might instead attempt to scrape away armor from the fuel tanks in order to hit that location with a magnesium round. While a player can resolve his hits in any way he chooses, rolling all his hits before applying any damage to the target allows him to apply damage according to a carefully thought-out strategy.

Damage Diagram

Each aircraft has six damage tables divided into ten columns and varying numbers of rows. Damage is recorded by filling in these boxes.

Boxes surrounded by bold outlines and labeled with a part of the aircraft represent internal and critical components of the aircraft and are referred to as damage locations. If any box within a damage location is filled in, the component no longer functions. Any exceptions to this rule appear in the descriptions of the damage locations (see *Internal Damage Effects*, beginning on p. 39).

Damage Template

The plastic damage template is a tracing template that illustrates the damage profiles that different weapons and ammunition loadouts inflict on targets. Some damage profiles are narrow and deep, while others are broad and flat. Each weapon damage profile has a centering arrow on its top edge that is used to align the profile to the column determined by the attacker's die roll. Use this template to mark off armor and internal components of the aircraft that are damaged by an attack.

The template also notes the weapon's range and zeppelin damage (see *Zeppelins*, p. 45).

Determining Column Hit

For each weapon hit, the attacker rolls a die to determine which of ten columns was hit by the incoming machine-gun round or rocket. The die roll result can be altered by an attacker with a high Steady Hand skill as shown on the Shifting Columns Table.

SHIFTING COLUMNS TABLE

Steady Hand Skill	Columns Shifted
0-5	NA
6-8	+/- 1 column
9-10	+/- 2 columns

For example, Pilot Condor with his newly improved Steady Hand skill of 6 has hit the Nose of a target with two 70-caliber AP rounds. His first column roll is a 3; because the attack destroys a gun in that column, he does not shift columns. His second roll is a 4. He decides to shift the hit by one column to 3, allowing the damage to penetrate deep into the internals of his target's forward fuselage.

Marking Off Damage

The damage of a machine-gun round or rocket always moves to the interior of the target. This means that the centering arrow on the damage template should always point to the horizontal center of the damage diagram. For the Nose Fuselage and Port/Starboard Leading Wing tables, the centering arrow will point toward the bottom of the record sheet. For the Tail Fuselage and Port/Starboard Trailing Wing tables, the centering arrow will point to the top of the record sheet.

Once the column hit has been determined, lay the template on the record sheet over the damage diagram, using the centering arrow to align the template with the designated column on the damage table. The top of the template should be centered on the first undamaged box. Mark off the boxes that show under the template to indicate that they are destroyed.

For example, the first damage box would be the first armor box on an undamaged plane or an interior box if the plane had already taken damage in that column.

If the attack hits in columns 1 or 10, part of the damage template may fall outside the damage diagram. This damage is simply lost. If the damage covers boxes already destroyed, the damage is also lost. If the damage template covers boxes in one of the other damage tables, it represents a lucky break for the attacker.

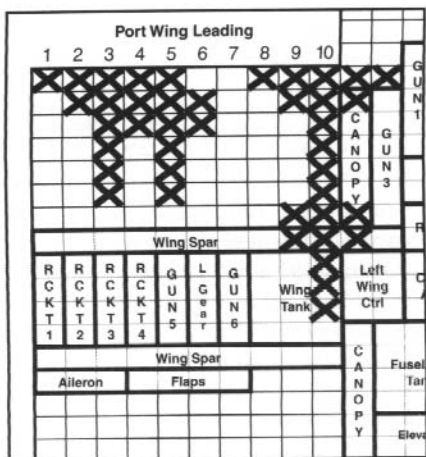


Diagram A: Illustrates the following hits in this order:

AP 70 in column 3

AP 60 in column 5

AP 70 in column 10

AP 60 in column 10

The last AP 60 hit damaged the wing tank and so the remaining boxes in that location should be marked off immediately, as shown in Diagram B.

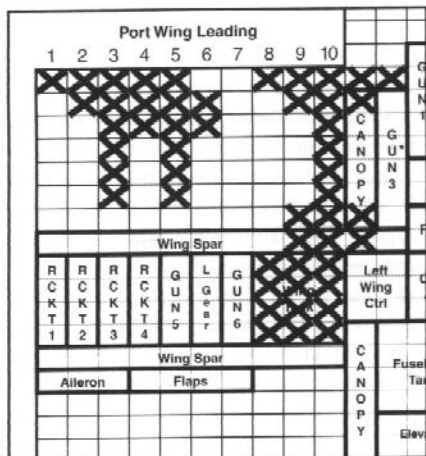


Diagram B: Damaged fuel tank is immediately marked off.

Not Widowed because of diagonal connection

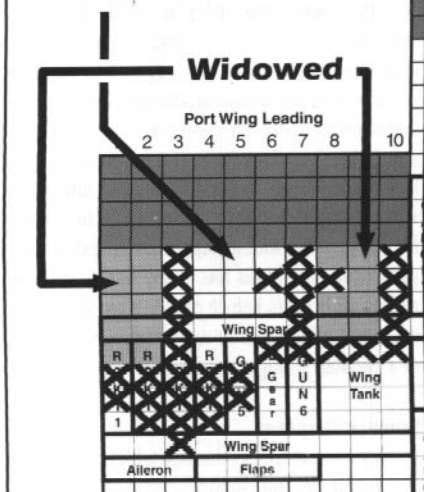


Diagram: Widowed damage

Widowing armor and internal components: If, after an attacker has resolved all of his hits, an area is surrounded by marked-off boxes and/or the edge of the damage table, that area is considered "widowed" and is destroyed. To be widowed, the damaged boxes must connect flat edge to flat edge; this connection cannot be on a diagonal. If you cannot trace a path of undamaged boxes from a location on the plane to the center of the plane, then armor has been widowed.

Widowing allows large areas to be destroyed without hitting each box. Because widowing takes place after all of one attacker's hits have been resolved, a second attacker who hits the target reaps the benefits of widowed boxes being removed.

Cutting a wing off or a plane in half: If damage can be traced from a front facing of the plane (port/starboard wing leading or nose fuselage) to a rear facing of the plane (port/starboard wing trailing or tail fuselage), the plane has been cut in half and is destroyed. This damage must connect flat edge to flat edge, not diagonally.

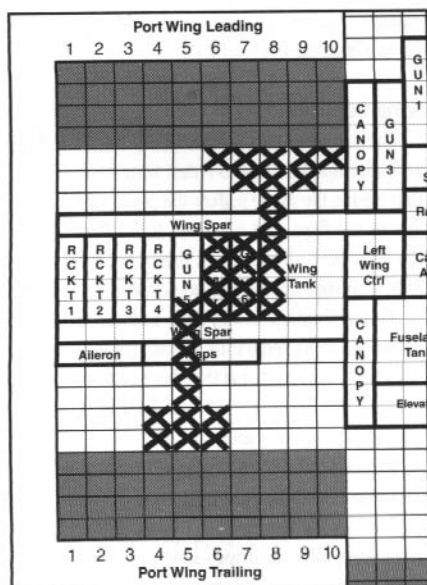


Diagram: When front and back damage connects, the plane is destroyed. In this, case the port wing has been sheared off.

Internal Damage Effects

For all internal damage locations, the first box filled in destroys the component. For example, the Engine Destroyed location contains eight boxes, but as soon as one of the boxes is marked off, the engine is destroyed. In other words, the first hit in an internal damage location breaks the critical component and the aircraft suffers the effect noted below. The remaining boxes in that location are not marked off until damaged by a hit, unless otherwise noted; they act as a sort of shield or additional armor to protect the remaining internal components.

Canopy

Every hit to the canopy (not every box marked off) requires the pilot to make a Constitution roll. Boxes lost through widowing are considered a single weapon hit. On fighters with turrets, rear canopy hits affect the gunner rather than the pilot.

Engine

Damage to an engine location (labeled Max Speed) reduces the maximum speed of the plane as indicated on the damage diagram. If the maxi-

mum speed for the location damaged is higher than the plane's initial maximum speed, the damage does not affect the engine, but serves as additional armor. As soon as the engine is damaged, the plane may not move faster than the Maximum Speed for the location damaged. For example, if the first engine location damaged is Max Speed 1, the plane may only fly at a speed of 1. Because a plane's maximum acceleration is limited to its maximum speed, reducing the plane's maximum speed may also reduce its acceleration rating.

When the engine is destroyed, the plane will glide for a number of turns equal to its speed when the engine was destroyed. The plane will decelerate one speed level per turn; when the plane reaches a speed of 0, it will hang in the air for one more turn and then plummet to earth. While the plane is gliding, it can only perform straight (S) maneuvers, not including the Immelmann.

For example, if a plane was moving at a speed of 3 when its engine was destroyed, on the following turn it will move at a speed of 2, then 1, then 0. On the fourth subsequent turn, the plane dives for the ground.

Fuel Tanks

If a fuel tank takes damage, the tank immediately empties out and all the boxes are marked off, leaving a gaping hole in the aircraft. The next shot can then take advantage of the void.

If an undamaged fuel tank is hit with a magnesium round, the plane is destroyed. If the magnesium round will burn into the fuel tank on the current turn, the plane is destroyed at the end of the Combat Phase of the turn that the magnesium fire reaches the tank. A magnesium round that hits a damaged fuel tank inflicts its damage to the next undamaged boxes on the plane.

If all fuel tanks are destroyed, the plane acts as if the engine was destroyed (see *Engine*).

Guns

A hit to a gun location destroys the gun, and that gun cannot fire for the rest of the mission.

Landing Gear

Loss of the landing gear makes it more difficult for a surviving plane to land safely. See *Landing*, p. 31.

Pilot/Gunner

For each box marked off on the pilot/gunner damage location, the pilot/gunner loses 1 point of Constitution. Each time the pilot/gunner is hit, the player must make a Constitution roll using the reduced Constitution to avoid going into shock. When Constitution reaches 0, the pilot/gunner is dead.

Radio

A hit to the radio location destroys the radio and leaves the pilot with no communications. See *Collisions*, p. 27.

Rockets

A hit to a rocket location destroys the rocket.

Tail Controls

The tail controls connect the pilot to the rudder and elevators. Damage to this location means the plane suffers the penalties for damage to the rudder and elevators. If the elevators and rudder have already been damaged, a hit to the tail control location has no additional effect. If only the elevators or the rudder have been damaged, for a tail control hit the plane suffers the penalties for the destruction of the remaining undamaged component.

Elevators: Damage to the elevator reduces the plane's ability to perform high-G maneuvers. The G rating is reduced by 1 on the side hit. For example, if the port elevator is hit, the G rating of left maneuvers is reduced by 1.

Rudder: If one side of the rudder is damaged, the rudder is locked in that direction and the plane can only maneuver in that direction. If both sides of the rudder are damaged, the plane may only make straight maneuvers.

For example, Pilot Condor has a damaged right rudder, which means he can only perform R maneuvers. After a couple of turns, his left

rudder is also damaged. Now he can only perform S maneuvers.

Wing Controls

The wing controls connect the pilot to the flaps and ailerons. Damage to either wing control location means the plane suffers the penalties for damage to the flaps and ailerons. If the flaps and/or ailerons have already been damaged, a hit to the wing control location has no additional effect.

Flaps: Damage to the flaps reduces the ability of the plane to reduce its speed quickly. Damage to either flap means that the plane can only reduce speed by 1 level per Movement Phase without pushing the deceleration.

Ailerons: The loss of a wing's aileron reduces that side's maximum G rating by 1. For example, if a plane with a G rating of 3 takes damage to the right-wing aileron, it may now only perform 2-G right-turn maneuvers without pushing the Gs.

Wing Spar

The loss of a wing spar reduces the structural integrity of the aircraft and so reduces its ability to pull Gs. Each damaged spar reduces the G rating of the wing by 1.

Zeppelin Gear

Damage to the zeppelin location makes it difficult for the plane to land safely. See *Landing*, p. 31.

WEAPONS

Weapons in *Crimson Skies* break down into two basic types: weapons that are aimed (machine guns) and weapons that are launched or deployed (rockets, bombs and torpedoes).

Machine Gun Ammunition

Machine guns and the rounds they fire are rated by caliber (.30 cal, .50 cal, and so on). A machine gun can only fire the ammunition it is rated for; a .50 cal machine gun can only fire .50 cal ammunition. The range of machine guns is determined by the caliber, as shown in the Machine Gun Range Table. The ammunition type

Rockets

Each rocket hardpoint can mount a different type of rocket. Each rocket is a self-contained weapons system, capable of one shot and operating independently of other rockets mounted on the plane.

Armor Piercing (AP)

Armor-piercing rockets serve as the main battering ram of aerial attacks. These large rockets inflict significant damage by penetrating deep into the target plane.

High Explosive (HE)

High-explosive rockets explode upon impact, driving shards and fragments of metal deep into the target. They are most effective if fired after another type of round has penetrated into the interior of the aircraft.

Flak (FK)

Flak rockets allow a pilot to place a cloud of airborne shrapnel in a target hex, "channeling" his opponent's movement by effectively blocking certain hexes. If a pilot knows his opponent's movement, he can force his opponent to fly into a flak cloud. Flak rockets are fired at a target hex, rather than a plane, and automatically hit their target. The rocket explodes at the end of the Movement Phase in the turn following its launch, inflicting damage to everything in the surrounding

mega-hex and double damage (two hits) to anything in the target hex. The launching player determines damage for each affected plane, friendly and enemy. Use the hit location table indicated by the affected plane's orientation to the target hex. For example, if an enemy plane is in the "C" hex-side of the target hex, the damage will hit either the starboard wing trailing or the tail. If the affected plane is in the target hex, the damage is applied to the Nose-to-hit table.

Flare (FL)

Flare rockets blind enemy pilots, making them easier prey. Flare rockets are fired at a target hex rather than a plane, and automatically hit their target. The pilot of any plane directly facing or occupying the target hex (any pilot or wingman who can draw a straight line of hexes to hex of flare) must make a Constitution roll to avoid becoming temporarily blinded and shocked. A shocked pilot must choose a straight maneuver the next turn.

The launching pilot is immune to the effects of his own flare rocket, but it will affect his wingman if his wingman's position meets the requirements.

Sonic (SS)

The explosion of a sonic rocket creates a sonic blast that stuns pilots and makes them easier targets. Sonic rockets are fired at a target hex rather than a plane, and automatically hit their target. The pilot of any plane in the surrounding mega-

DEPLOYED WEAPONS TABLE

Weapon	Range (in hexes)	To-Hit Modifier	Hardpoints Required
Armor Piercing Rocket	4	+1	1
High Explosive Rocket	4	+1	1
Flak Rocket	7	—	.5
Flare Rocket	7	—	.5
Sonic Rocket	7	—	.5
Harpoon Rocket	1	+2	.5
Ultra-sonic Beeper-Seeker			
Beeper	7	+1	.5
Seeker	4	+1	1
Drill Rocket	7	+1	1
Aerial Torpedo	Variable (see p. 45)	Variable (see p. 45)	2
Bombs	1	Variable (see p. 44)	Variable

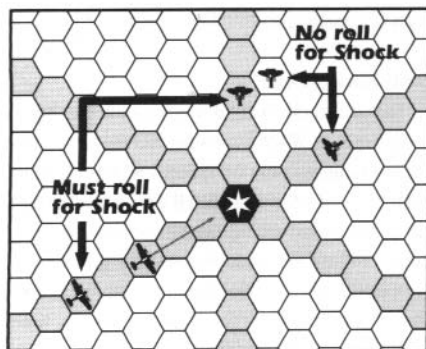


Diagram: Effects of a flare rocket

hex must make a Constitution roll to avoid becoming temporarily stunned and shocked. A shocked pilot must choose a straight maneuver the next turn.

The launching pilot is immune to the effects of his own sonic rocket, but it will affect his wingman if his wingman's position meets the requirements stated above.

Harpoon (HP)

The harpoon is used to snag objects from zeppelins and pick up objects from the ground. This is a very delicate maneuver. The pilot must hit the object with the harpoon, slow down as much as possible in order to lift the object, then accelerate in order to stay aloft with the object in tow. When all this happens under fire, you'd better be sure the object is worth all the risk and trouble.

The harpoon can only be used to grab an object from the ground, a building or a zeppelin. It cannot be used against other aircraft to inflict damage.

A harpoon rocket attacks using the same rules as high-explosive or armor-piercing rockets, with a to-hit modifier of +2. To successfully grab an object, the spring-loaded teeth of the harpoon must penetrate through the target's armor and open in its interior. On a successful to-hit roll, the harpoon has grabbed the object. On a failed roll, the harpoon and cable are lost. Once an object is successfully grabbed, the pilot must attempt to lift it.

Lifting Objects: In order to lift an object, the pilot must pull the object up with his plane with-

out breaking the tow cable or unseating the harpoon. The target number for lifting an object is (base target number of object) + (2 x aircraft's current speed) - Natural Touch skill + 2 (if pilot is shocked). On a successful lifting roll, the pilot has succeeded in grabbing the object and is towing it. On a failed lifting roll, the pilot dropped the object and lost the harpoon and cable.

Towing Objects: Towing any object reduces a plane's top speed by 2, to a minimum of 1. This means that a plane must be capable of a speed of 3 in the turn in which it plans to tow an object. If the plane's speed drops below 1, the pilot must cut the tow cable or crash.

While the plane is towing the object, any attacker that successfully hits the towing plane can designate either the plane or the towed object as the target. If the object is targeted, a hit location roll of 1 to 6 hits the object and 7 to 10 hits the cable. If the tow cable is hit, it breaks and the object drops to the ground. If the attack hit the object, apply a number of points of damage equal to the number of boxes in the appropriate damage template (see *Gas Cells*, p. 46). If the attacker chose to target the plane, apply damage as normal.

While towing an object, the pilot may not attempt any maneuver rated at 2 Gs or higher. Any such attempt breaks the cable, dropping the object and automatically inflicting stress damage equal to the attempted Gs - 1 to each forward wing damage table.

Dropping Objects: When dropped, the object lands in the hex behind the towing plane.

Ultra-Sonic Beeper-Seeker (BP/SK)

The ultra-sonic beeper-seeker rockets work as a set; one rocket emits a homing signal, and the other seeks this signal, homing in on whatever the signal is attached to. This combination of rockets is particularly deadly.

The beeper rocket is essentially an armor-piercing rocket equipped with an ultra-sonic transmitter. If the beeper rocket hits its target, it does no damage, but attaches a broadcasting device to the target. It will broadcast the ultra-sonic homing signal for the remainder of current turn and for four additional turns.

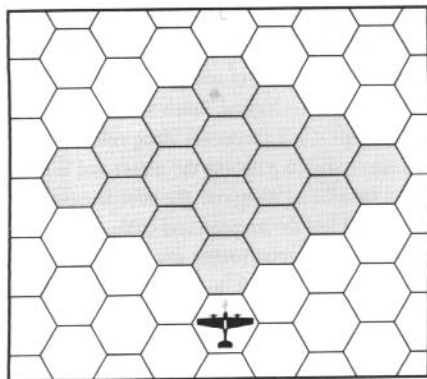


Diagram: Seeker rocket firing arc

The seeker rocket is essentially a miniature, radio-controlled, rocket-powered plane whose wings unfold upon launch. The seeker is directed to its target by an on-board ultra-sonic-seeking guidance system. When fired at a target tagged with a functioning beeper rocket, its firing arc widens to include the hexes on either side of the forward hex in a V shape. Although the seeker rocket is "smart" enough to move toward the transmitter, it is not sophisticated enough to avoid collisions. For this reason, the firing pilot must still have a clear line of sight to the target plane. The rocket can be fired as a standard AP rocket at any time.

When calculating the seeker to-hit target number, do not use a deflection modifier, but add the G rating of the target plane's last maneuver, reflecting the fact that high-G maneuvers help shake seeker rockets.

Because dogs can hear sounds on the ultra-sonic frequency, many pilots fly with their dogs in the cargo area as an early warning system to discover that their plane has been tagged with the beeper: when Fido starts barking, start pulling the

high-G maneuvers.

Drill Rocket (DR)

The drill rocket's flight winds an integral high-torque spring. When the rocket hits the target, the impact punches exterior spikes into the target to grab hold, then the drill head is driven into the target by the wound spring. On the initial hit, the drill rocket inflicts the damage shown by the damage template. Each turn after the initial hit, the rocket may to continue to drill inward by 4 boxes (one row 3 boxes wide, plus the center tip, in the shape of the bottom of the template). To determine if the drill keeps moving, at the end of each Combat Phase the attacking player rolls against a target number equal to $10 - (\text{range of the attack})$. On a success, the rocket will continue to drill. On a failure, the drill stops and will do no more damage.

Bombs

Bombs are essentially big hunks of high explosives dropped from diving planes. They are usually dropped in the same hex as the attacking plane, though they can be aimed at any adjacent hex. The Bomb Table shows the bomb sizes, the hardpoints required for a single bomb, the to-hit modifier and the damage from a successful hit.

The to-hit number for attacking with a bomb equals (target base to-hit number) + (bomb to-hit modifier) + 5 (if attacking an adjacent hex) - (pilot Dead Eye skill) + 2 (if pilot is shocked).

On a successful roll, apply damage normally. On a failed roll, the attack misses and the bomb scatters. Roll a die and use the scatter diagram to determine where the bomb lands. If a ground object occupies the hex the bomb lands in, apply damage normally.

BOMB TABLE

Size (in pounds)	Hardpoints Occupied	To-Hit Modifier	Damage
100	1	5	1 hit using AP or Flak rocket template
250	2	6	3 hits using AP or Flak rocket template
500	4	7	6 hits using Flak rocket template
1,000	8	8	12 hits using Flak rocket template

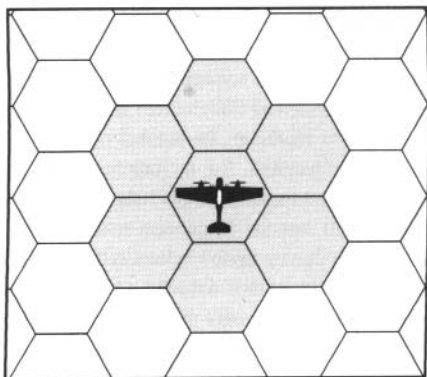


Diagram: Bomb target hexes

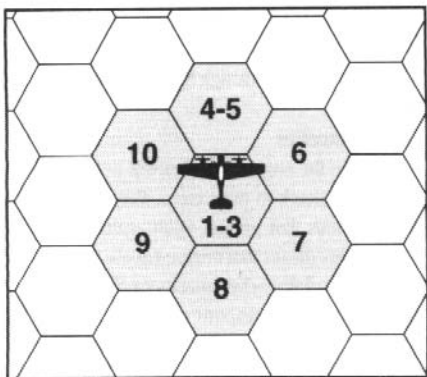


Diagram: Bomb scatter zone

Aerial Torpedo

The aerial torpedo is pretty much the deadliest weapon airmen can deploy. This large, limited-flight torpedo is aimed by the direction of the firing plane's travel as well as the skill of the pilot. In other words, the longer the attacking plane stays on target, the greater accuracy the torpedo has and the more likely it is to remain on target after released. The greatest difficulty of successfully firing the aerial torpedo is that your target quickly becomes clear to your enemies, and then your friends must protect you in order for you to not veer off the attack path. Because an aerial torpedo must travel the final distance to the target on its own, it can only be launched at stationary or effectively stationary objects.

The to-hit number for the aerial torpedo is (base target number of object) + (weapon modi-

fier of 5 + 3 for each hex traveled after deployed, minimum 1 hex) - (1 per hex the plane traveled in a continuous straight path before deploying) - (launching pilot's Dead Eye skill). The pilot may fly straight for several turns to accurately aim the torpedo and obviously, it is to the attacking pilot's advantage to get as close as possible to the target before releasing the torpedo.

On a successful hit, the torpedo inflicts damage equal to four AP rocket hits and using the AP template. All damage will hit the same damage table. Roll columns for each of the four hits individually.

For example, *Ivy Iverian* is on a torpedo run against the engine pod of a commercial zeppelin. She has performed three 3SA maneuvers in a row and is ready to release the torpedo at a range of 2 hexes from the target. The to-hit number is (engine nacelle target number of 7) + (weapon modifier of 5) + (range modifier of 6) - (3 points per hex moved for three 3SA maneuvers = 9) - (Dead Eye skill of 6) = 3.

ZEPPELINS

Zeppelins are huge airships consisting of a sturdy cloth stretched over an aluminum framework, kept aloft by enormous bags filled with helium or hydrogen. The massive ship is powered by engines supported in nacelles along the sides of the ship. These nacelles are protected by weapon turrets built on top of each nacelle.

There are minor differences between commercial and military zeppelins. Both have turrets carrying anti-aircraft weapons and are accompanied by a squadron of fighters for protection. In addition, a military zeppelin carries a battery of main guns, and the zeppelin itself is constructed from a reinforced "bullet proof" material that serves as a sort of armor.

Certain desperate bands of pirates are rumored to use hydrogen rather than helium to keep their zeppelins airborne, but the extreme flammability of that gas makes this choice very risky.

Movement

For purposes of *Crimson Skies*, zeppelins do not move around the board. However, they do

block fighter movement and attacks in the hexes they occupy.

Combat

The goal of an attack against a commercial zeppelin is to disable it and capture its cargo. The usual strategy for accomplishing this is to destroy the engine nacelles while inflicting minimal damage to the helium cells.

The goal of an attack against a military zeppelin is to destroy it, best accomplished by destroying the helium cells.

Combat between and against zeppelins uses the same rules as for fighter combat, with the following exceptions and special rules.

Gas Cells

The mid-sized zeppelins represented by the map have five independent gas cells. Because the cells are so vast, any pilot in range need only avoid rolling a 1 (automatic failure) to successfully hit a gas cell. A pilot in shock must add the standard +2 modifier to this roll, for a target number of 3.

Every round that hits a gas cell causes a leak, and thus a reduction in buoyancy. The gas cells are rated at 60 points each for a zeppelin total of 300 points (60 x 5 cells). The zeppelin remains air-worthy until the total points for the gas cells is reduced to 120 or less at which time the zeppelin plummets from the sky.

Against gas cells, a weapon inflicts a number of points of damage equal to the number of boxes in the weapon's damage template. There are two

numbers divided by a slash (labeled Zep. Dmg.) printed under the damage template of each weapon. Use the first number for gas cell damage against a commercial (unarmored) zeppelin. This number also represents the number of boxes in the damage template. Use the number after the slash for attacks against the gas cells of a military (reinforced) zeppelin. Magnesium rounds do not inflict burn damage against helium cells, only the damage shown by their template. (A magnesium round that hits a hydrogen gas cell causes a spectacular conflagration and completely destroys the zeppelin.)

If a gas cell is destroyed (reduced to 0 points), the cell has been shredded and the aluminum framework of the zeppelin is exposed. Planes may now fly and attack through the zeppelin.

Engine Nacelles

Because the engine nacelles will be the primary focus of attack in most cases, they are covered in heavy mats that protect them against shrapnel attacks. This means that engine nacelles cannot be damaged by flak rocket attacks or flak barrages. All other types of weapons affect the nacelles as normal.

To hit the engine nacelle, make a to-hit roll against a target number of 7, using all standard modifiers, but no deflection modifier.

If an attacker is facing the zeppelin when firing at another plane or at an engine nacelle, any shots that miss the target will hit a gas cell. For any failed to-hit rolls for shots fired at targets between the

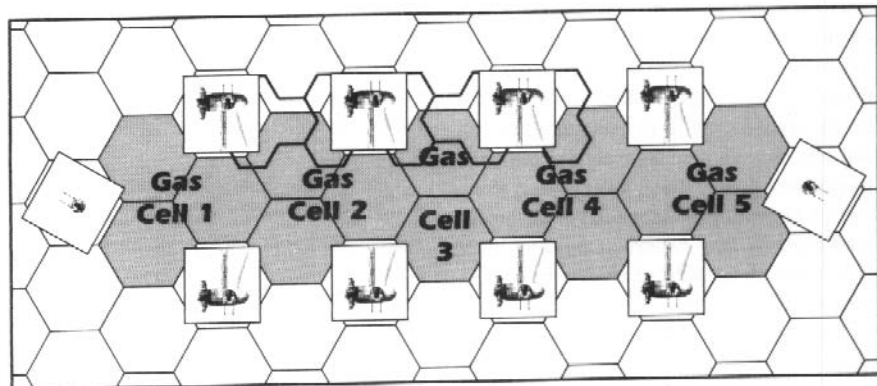


Diagram: Zeppelin gas cells

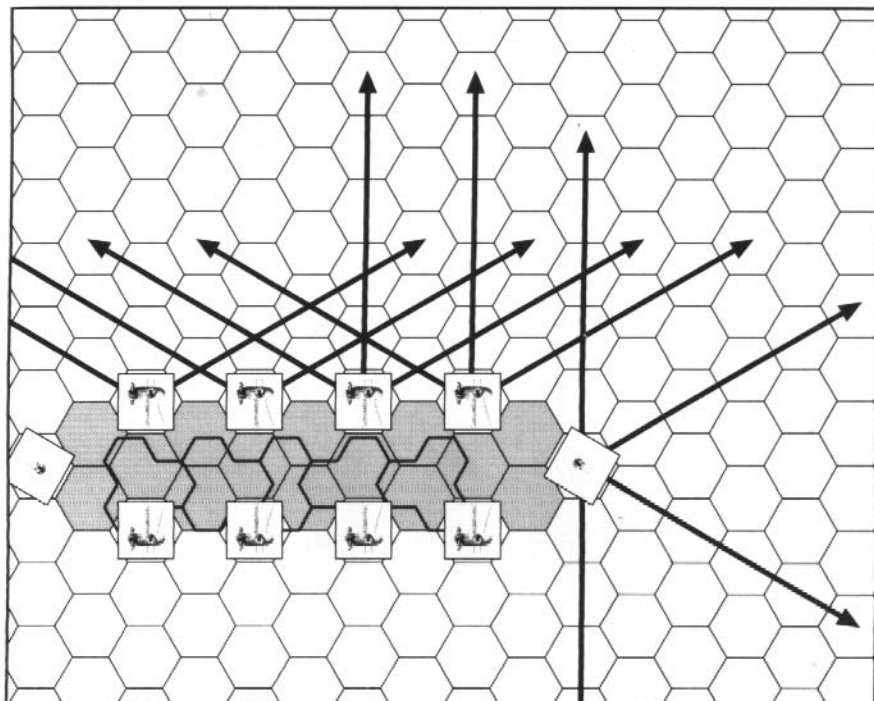


Diagram: Zeppelin gun pod firing alleys

attacker and a zeppelin, the ordnance will continue past the target in the same hexrow and hit the first undamaged box of the gas cell on that hexrow.

Turret Attacks

The anti-aircraft turrets each carry one or two machine guns or a flak cannon. The machine guns can be of any caliber. The turret-mounted guns have a range 2 hexes longer than the plane-mounted version. For example, an airplane-based 70 cal machine gun has a range of 3 hexes; the zeppelin version has a range of 5 hexes.

The firing direction of turrets is established after all movement is resolved. Turrets always fire last in a combat. The port and starboard engine nacelle-mounted guns can rotate to fire into three hexrows. The bow- and stern-mounted turret guns can rotate to fire into four hexrows.

Main Gun Attacks

The main batteries are primarily intended for capitol ship action or large-scale ground bombardments. There are three main battery guns per side of the zeppelin (left and right). Each turn, each gun can fire one flak round to a range of 8 hexes. In anti-fighter roles they fire suppressive flak, filling the sky with shrapnel. These flak barrages work just like fighter-based flak rockets; they are aimed at a target hex, automatically hit that hex, and explode at the end of the Movement Phase in the turn after being fired. They inflict damage to everything in the surrounding mega-hex and double damage (two hits) to anything within the target hex. Fighters can avoid the hexes targeted by a flak attack, but this barrage produces such a dense flak cloud that it may prove difficult to fly around.

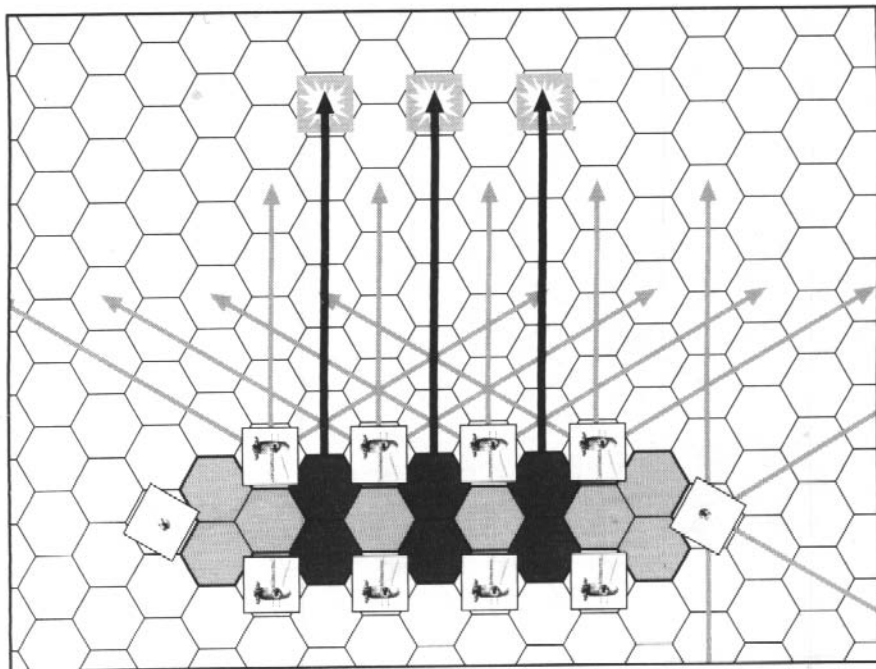


Diagram: Military zeppelin flak alleys

Zeppelin Gunners

Zeppelin gunners are subject to shock from flare rockets or sonic detonations. Gunners are considered to be facing the hexrow toward which the gun is pointing. All zeppelin gunners are considered to have a Constitution of 2, modified by +3 to account for the protection they receive from the equipment surrounding them, for an effective Constitution of 5. If a gunner becomes shocked, the gun counter is turned over for the turns he or she is in shock to indicate that the gun cannot fire that turn.



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