

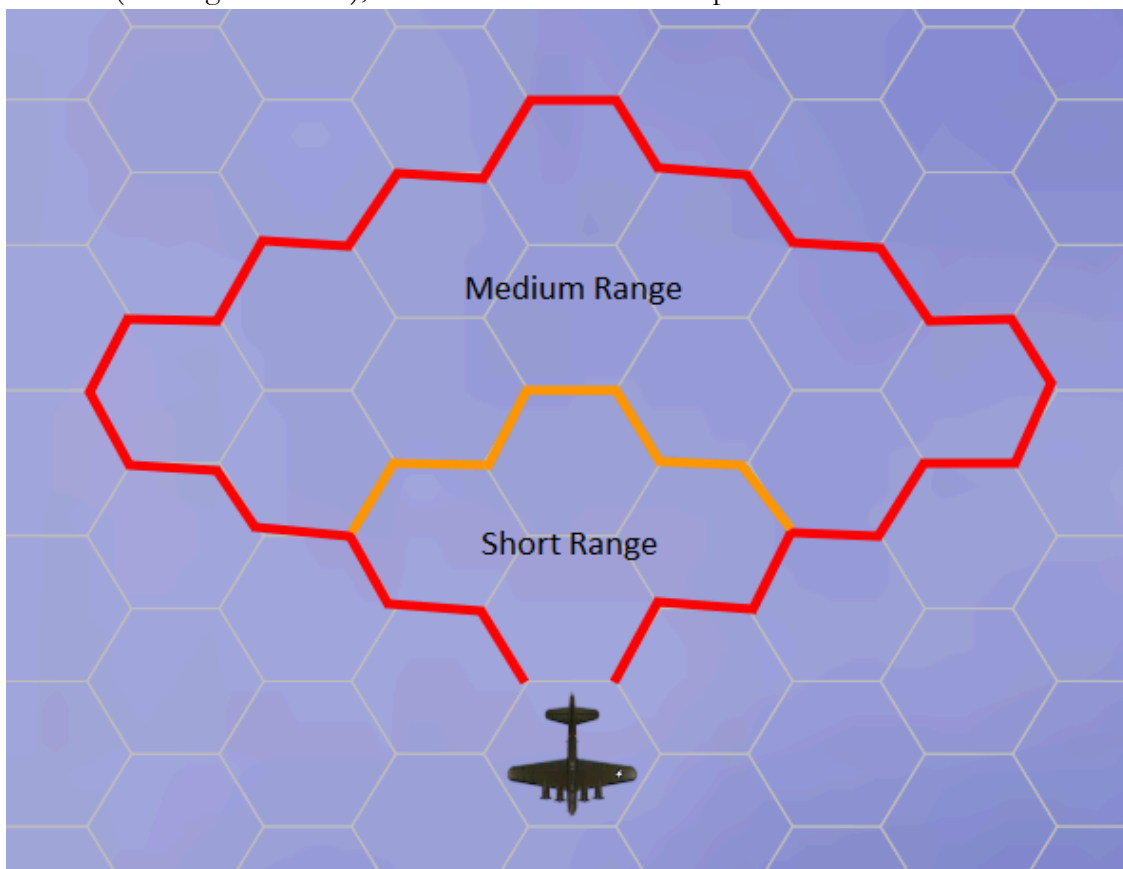
# Frozen Skies Air Combat

The following rules have been created for Frozen Skies, though you may alternatively use either the Chase rules from the Savage Worlds Adventure Edition rulebook or the *Aces High* SWAG supplement depending on what works best for your group.

## Rules Specific to Frozen Skies

Frozen Skies uses the SWADE vehicle rules for Recoil, Unstable Platform and modifiers imposed by Weapon Ranges (adapted for hex squares).

Fixed weapons may only target the three hex rows in front (or behind) the aircraft - the one directly in front, and the two parallel and adjacent to that. Pintle-mounted weapons fire in a cone shaped cluster of hexes (see diagram below), whilst Turret-mounted weapons fire in a circle round the aircraft.



**Aircraft Size on the Hex Grid:** Aircraft take up one hex square, though airships can take up many more.

**Bailing out:** If a plane becomes Wrecked, its crew can attempt to bail out. This can be a very difficult task and is sometimes no safer than riding round a twisted metal coffin. Bailing Out is a Challenging Dramatic Task for a single person. Multi-crew aircraft can turn Bailing Out into a Multi-Person Task with the number of tokens needed appropriate for the number of characters. Support rolls like Piloting to try and keep the aircraft level or Strength to drag an injured or unconscious crewman add to the successes needed.

## Air Combat: [The Basics](#)

Air combat in Frozen Skies uses a hex grid with each hex representing one inch for weapon range and Top Speed (rounding up where needed).

**Optional Rule: Wingmen** – If running an air combat with a large number of aircraft, you can use this optional rule to help speed things up. Wingmen are Extras under the normal SWADE rules, though their aircraft have less Wounds than ones flown by Wild Cards. A Wingman's aircraft will have a number of Wounds equal to one plus one per Size Category, for example this would be 2 Wounds for a Large aircraft.

## Movement

Aircraft move one hex square up to a maximum of their Hex Speed rating, though they must move at least half their Hex Speed. Moving slower than half your Hex Speed is possible, but it requires making a Piloting roll to avoid going out of control. An aircraft can move in a straight line or turn left or right one hex square. Harder turns are available but these have a -2 penalty on Piloting rolls in order to achieve. Additional turns have a cumulative -2 penalty, so -4 for two additional turns and so on.

- Turn (60 degrees): first one is free, next one -0, -2, etc.
- Tight Turn (120 degrees): -2, -4, etc.
- Bootlegger Reverse (180 degrees): -4 (only once per turn)

## Terrain

Generally air combat will take place at higher altitude, so the typical 'terrain' will be clouds. These can be placed at random and provide a cumulative +2 cover for each hex square of cloud between opposing aircraft.

## Boost

A pilot can move his aircraft an additional 1d6 hex squares if they wishes. Though the pilot then suffers a -2 penalty to all their other actions when boosting their aircraft speed. This penalty is reduced to -1 by the Steady Hands Edge (similar to the penalty for running).

## Fuel Usage

Every 100 miles, and immediately after any combat, aircraft need to check for fuel usage. This is a d6 roll modified by the plane's fuel level and the distance flown. The roll is at -1 for every 100 miles flown. Each failure on the roll reduces the fuel level by one. Fuel Usage Chart Topped off the Tank +2 About Half, Give or Take +1 Might Need to Head Home +0 Flying on Fumes -1 Dead Stick Better hit the silk or find a place to land.

## Aircraft Creation

Aircraft creation in Frozen Skies uses an updated and adapted version of the Aircraft Construction rules found in the Pulp Gear Toolkit, which are used here with the kind permission of Pinnacle Entertainment Group.

Each aircraft has three key components – chassis, modifications, and weapons. Tables for each of these can be found on pages.

## Chassis

For ease, planes are listed in four categories—light, medium, and heavy fighters, and bombers. For the purposes of keeping things simple, trivial things like thrust to weight ratios and aerodynamics are ignored.

The chassis determines a plane's base Acceleration and Top Speed, as well as its Handling. These can be increased with modifications. Handling is a measure of how maneuverable the plane is and gives a modifier to all Piloting rolls.

Every vehicle has a base Toughness dependent on its chassis size. This also determines how much Armor a plane can carry.

A chassis can hold a variable number of spaces worth of gear or weapons, depending on its type. Spaces are an imaginary unit used solely for placing modifications and weapons. Don't start fretting about cubic feet, whether the frame can support the weight, or anything like that. The number of engines isn't hugely important outside of combat, as every plane has enough to get it airborne and keep it in the sky. You can add extra engines, however. This is covered in the Modifications section below.

This chart lists the different available types of chassis and their effects on Acceleration, Top Speed, Toughness, etc.

Size	Top Speed	Hand*	Tough	Armor*	Spaces**	Engines	Cost	Notes
Light	320	+1 (+3)	10	2 (4)	8 (4)	1 (2)	£600	Fighter
Medium	280	+0 (+2)	11	2 (6)	10 (6)	1 (2)	£1,000	Fighter
Heavy	240	-1 (+1)	12	2 (8)	14 (8)	2 (4)	£1,600	Fighter /Light Bomber
Bomber	180	-2 (+0)	14	2 (8)	20 (12)	4 (4)	£3,000	Bomber

*\*Numbers in parentheses are maximum ratings.*

*\*\*Numbers in parentheses are the maximum amount of spaces that may be devoted to guns or rockets. A plane may use its entire space allotment on bombs.*

## Modifications

Modifications are extra fittings designed to give a plane an edge in certain situations. Unless otherwise stated, a vehicle can only have one of each type. When a modification is based on the size of the plane, such as Camo Paint requiring one space per size of the vehicle, Light equates to 1, Medium 2, Heavy 3, and Bomber 4.

You can 'buy' extra spaces for modifications on your aircraft. The number of extra spaces you can get is equal to one per size category of the aircraft, so one space for a Light Fighter, two for a Medium Fighter and so on. Though buying these extra spaces will impose a -1 penalty on the aircraft's Handling to reflect changes to the aircraft's chassis.

## Aircraft Size Category

Light Fighter – 5 (Large)

Medium Fighter – 6 (Large)

Heavy Fighter – 7 (Large)

Light Bomber – 8 (Huge)

Bomber – 10 (Huge)

**Airbrakes** – Airbrakes provide a +1 bonus to Handling when rolling for Maneuvers.

**Armor** – Every plane has a base Armor value and a maximum Armor value. Each space increases the Armor rating by +1. Armor may be heavy, but it can make the difference between life and death.

**Armored Cockpit** – This modification installs some extra armor round the cockpit to provide a little extra protection for the pilot. This counts as +1 Armor for when Crew results is rolled on the Vehicle Critical Hits Table and may only be taken once.

**Camo Paint** – The aircraft is painted to match the colour of the sky when seen from below and the ground when seen from above. While the underside painting can remain pretty much the same across the globe, the top part must be purchased in either a forest, snow, grass, or desert scheme. Rolls to detect the plane visually suffer a –4 penalty.

**Cargo Space** – Hauling cargo is something a lot of pilots end up doing to earn some coin and thus keep flying. Every Cargo Space can hold one ‘unit’ of cargo.

**Custom Paint Job** – Pilots are individuals, and they want their crate to stand out from the crowd. A custom nose job might be a set of shark’s teeth along the engine cowling or a painting of a girlfriend. A full body job is exactly what it says—every inch of the plane is covered. A pilot whose plane has a custom paint job can make an Intimidation Test of Will as a Manoeuvre. If the plane has a full body job, the pilot adds +2 to the roll. Of course, painting the outside of a plane doesn’t actually use any space; the space requirement is merely a game mechanic to balance out the bonus.

**Escape Hatch** – Grants +2 bonus on Bailing Out rolls, may only be taken once.

**Extra Ammo** – Extra ammo can mean the difference between life and death in an extended dogfight. The space requirement varies with the size of the gun array. A single gun uses 0.5 spaces, a pair one space, two pairs two spaces, and so on. Each extra ammo bin doubles the amount of ammo available to the gun/ array.

**Extra Engines** – Extra engines mean that the plane can afford to take multiple engine hits before it falls from the sky.

**Extra Fuel Tanks** – A pair of extra fuel tanks grant a +2 bonus to fuel usage rolls. The amount of space used depends on the size of the aircraft.

**Flotation Gear** – Sometimes airplanes get downed over the sea. Flotation gear allows the plane to land on water as if it were land and, more importantly, stops the aircraft sinking.

**Improved Gunsight** – Fitting a new gun sight can help increase accuracy, and thus granting a +1 bonus to Shooting rolls.

**Increased Handling** – By tweaking the aileron and rudder controls, the plane can be made more manoeuvrable. Each space gives +1 to Handling.

**Increased Torque** – Increasing the engine’s torque delivers more power to the propellers. +20 MPH for aircraft.

**Rear Mounted Guns** – This fighter-only mod makes for a nasty surprise to anyone tailing the craft. The plane has one or more pairs of guns mounted to fire backward. These guns may be of the same type as forward-facing guns without forming a link. So, for example, you can have a pair of 0.3 guns facing forward and a separate pair facing backward. Each pair counts as a separate weapon.

**Sturdy Construction** – Roll twice on Vehicle Critical Hit Table, pick the best result. Can only be taken once.

**Turbo** – A turbo is similar to a torque increase, in that it affects the engine. Turbo increases the Boost die to 1d8.

**Weird Science Mod** – Fit a Weird Science Device to your aircraft. Be sure to work with your GM as to what would be suitable for the campaign. This Device works the same way as any Arcane Device and comes with 5 power points.

**Zeppelin Hook** – The aircraft has attachments that allow it to fly beneath an airship and hook onto a clamp. Bombers cannot have this modification.

## Weapons

Aircraft can carry three different types of weaponry – machine guns, rockets and bombs.

### Machine guns

Machine guns are purchased as individual items with the statistics, such as costs and space requirements, being for a single gun.

Most aircraft carry multiple linked weapons rather than single mounted guns. All or some of the guns can be fired depending on the pilot's choice whenever the trigger is pulled. When fired, linked weapons use the same Shooting dice with the weapons' Rate of Fire determining how many Shooting dice are rolled. For every two weapons fired there is a +1 to attack and damage rolls.

Weapons of different calibres may be linked to fire together, though if the ROF of the weapons is different then use the lowest ROF to determine the number of Shooting dice to roll. When a hit is scored, the first hit is allocated to the lowest calibre gun, the next hit to the next highest calibre of gun and so on.

Each weapon array may only fire once per turn regardless of the number of crew the aircraft has. On bombers, individual or paired guns of the same type may be installed, but larger arrays can't be fitted.

Given that aircraft are constantly moving, hitting one is not an easy task and often the only way to guarantee a hit is to hold down the trigger. Because of this, ammo capacity is measured in bursts. The number of bullets in a burst isn't important – just reduce the bursts of all weapons fired by one each time the trigger is pulled.

### Rockets

Rockets can be used either in aerial combat or to pound ground targets. Each space devoted to rockets grants the pilot a pair of rockets which are treated as a single weapon. Unlike guns, however, firing a pair of rockets does not grant any bonuses to attack or damage rolls. Similarly, rockets can't lay down a hail of lead and thus each pair of rockets is a one-shot weapon. Once you've fired all of your rockets you need to land and reload them.

### Bombs

Bombs come in three sizes in relation to their template – small, medium and large.

Each space devoted to these weapons gives a fixed number of bombs depending on the size of the Burst Template the bomb creates. Fighters mount bombs on their wings whilst bombers carry them internally.

Bombs are designed to be dropped on ground targets and affect an area as opposed to an individual target. Bombs are always released in pairs to help balance the aircraft. For each pair of bombs dropped, the pilot places two Burst Templates of the appropriate size on the battlefield. The templates must be placed, touching side by side, along the flight path of the aircraft rather than in a forward facing line. Additional pairs of bombs dropped in the same round must be placed with the templates touching one another as above and touching the previous pair, thus forming a chain of explosions.

Bombs have Range brackets of half current Speed/Speed/2x Speed of the aircraft dropping them. The pilot makes a single Piloting roll as their attack roll. On a failure the bombs are off-target and deviate by 2d10" in a d12 direction, read as a clock face. All templates move the same distance and direction. Bombs cannot be used in combat against other aircraft.

Type	Range	Damage	Space	ROF	Bursts	Cost	Notes
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## Machineguns & Autocannons

30-cal MG	30/60/120	2d8+1	1	3	20	£40	AP 2
40-cal MG	40/80/160	2d8+1	1	3	16	£80	AP 2
50-cal MG	50/100/200	2d10	1.5	3	14	£150	AP 4
60-cal MG	60/120/240	2d10	1.5	3	12	£200	AP 4
20mm autocannon	50/100/200	2d12	2	4	10	£160	AP 4
30mm autocannon	50/100/200	3d8	2	3	8	£240	AP 6

## Rockets

Rocket (HE)	100/200/400	3d8	1	1	-	£20	AP 4; MBT
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## Bombs

Small bombs	-	3d8	1 per 8	-	-	£40	AP 10; SBT
Medium bombs	-	4d8	1 per 4	-	-	£40	AP 20; MBT
Large bombs	-	5d8	1 per 2	-	-	£40	AP 40; LBT

## Aircraft

### Cargo Plane

A dime a dozen, cargo planes are the backbone of air travel in Alyeska. Many isolated settlements rely on them for their very existence. Presented below are the stats for a typical cargo plane.

**Price:** £1,000

**Top Speed:** 184 MPH; **Engines:** 2; **Toughness:** 13 (1); **Handling:** -2; **Size:** 8 (Large); **Crew:** 3+24 passengers; **Cargo:** 3 tons.

**Weapons:** 2x Linked Medium MGs (Top Turret)

### Gyro-carrier

A gyro-carrier is a larger version of a gyrocopter built to carry passengers or cargo. Whilst not able to carry as much as a true cargo plane, it does have the advantage of being able to land almost anywhere.

**Price:** £700

**Top Speed:** 110 MPH; **Toughness:** 12 (2); **Handling:** 0; **Size:** 7 (Large); **Crew:** 2+8 passengers; **Cargo:** 1 tons.

### Hornet

The Hornet is the Royal Aero-Fleet's (RAF) interceptor, meaning that its job is to engage the enemy as quickly as possible. As such, it is built for speed and packs a mean punch with its 20mm autocannons, but it lacks armor and so is bit of a glass-jaw fighter.

**Top Speed:** 340 MPH; **Toughness:** 10 (2); **Crew:** 1; **Handling:** +1; **Size:** 5 (Large)

**Weapons:** 2x Linked 20mm Cannons (Fixed Front)

## **Kestrel**

More of a brawler compared to the Hornet, the Kestrel is the Commonwealth's main frontline fighter.

**Top Speed:** 300 MPH; **Toughness:** 12 (3); **Crew:** 1; **Handling:** +0; **Size:** 6 (Large)

**Weapons:** 4x Linked Heavy MGs (Fixed Front)

## **Trodai**

The Trodai, or Warrior, Fighter is a Commonwealth design that pre-dates the Great Darmonican War and has long since been withdrawn from service as newer and better designs were introduced. Many ended up in scrapyards where they were sold to, or stolen by, private groups such as merc outfits or sky pirates. The Warrior appeals to many a small outfit as it is a simpler design compared to modern fighters and it was built in large numbers, thus spare parts are still easy to come by.

**Top Speed:** 280 MPH; **Toughness:** 11 (2); **Crew:** 1; **Handling:** +1; **Size:** 6 (Large)

**Weapons:** 4x Linked Heavy MGs (Fixed Front)

**Notes:** Improved Gunsight

## **Drake**

The Drake is designed and operated as a ground attack fighter, typically used in pinpoint strikes. It is a heavy twin-engine aircraft crewed by a pilot and gunner.

**Top Speed:** 240 MPH; **Toughness:** 13 (3); **Crew:** 2; **Handling:** -1; **Size:** 7 (Large)

**Weapons:** 2x Linked 20mm cannons (Fixed Front), 1x Medium MG (Fixed Rear)

## **Firefly**

Fireflies form the mainstay of the RAF's light bomber force in Alyeska, and they also get used on a lot of recon and patrol sorties

**Top Speed:** 240 MPH; **Toughness:** 14 (2); **Crew:** 4; **Handling:** -1; **Size:** 8 (Huge)

**Weapons:** 2x Linked Heavy MGs (Nose Turret), 2x Linked Heavy MGs (Rear Turret), Bombs

## **The Iolar Light Bomber**

The Iolar, or 'Eagle', Light Bomber came about as part of a Royal Aero-Fleet requirement for a fast, light bomber to conduct strike raids against enemy targets. It has a speed to match most fighters and decent armaments, though it has a pitiful payload by bomber standards. As a result the Eagle tends to be used for pinpoint strike missions in flights of at least four to six aircraft.

**Top Speed:** 300 MPH; **Toughness:** 14 (2); **Crew:** 2; **Handling:** -1; **Size:** 8 (Large)

**Weapons:** 4x Linked .50-cal Heavy MGs (Fixed Front), 1x pair of rockets, or Bombs (8x Small or, 4x Medium or, 2x Large)

## **Valiant**

Other than skyships, the Valiant four-engine heavy bomber is the most powerful aircraft the RAF possesses, though they are deployed to Alyeska in limited numbers. There are currently just two squadrons comprised of twelve Valiants each.

**Top Speed:** 200 MPH; **Toughness:** 14 (2); **Crew:** 7; **Handling:** -2; **Size:** 10 (Huge)

**Weapons:** 2x Linked Heavy MGs (Nose Turret), 2x Linked Heavy MGs (Top Turret), 2x Linked Heavy MGs (Rear Turret), Bombs