



# Thoughts on Flying in Fantasy RPG's

You need a Flying Speed to effectively fly.

## Speed

Flying speed is creature's ability to sustain level powered flight, this also tells you how much wind you can overcome. Using the Dash action means a creature can effectively over come winds up to double their Flying Speed, more on that below.

Most flying creatures are much slower to get going than comparable creatures moving about on the ground, using legs. Most flying creatures takes at least 2 actions to get up to full speed using their wings (or similar natural powered flight) if they need to to take off from level ground. The bigger the creature is the more actions are needed to get up to speed.

Flying creatures can move up to twice their movement rate by diving, but they will need to loose at least a quarter of their altitude in order to do so. They can also accelerate up to their flying speed in a single action by using up at least half their movement rate in altitude.

Some creatures can safely dive to more than double their speed, maybe even up to 4 to 5 times their speed for really fast flyers (hawks for example). In order to accelerate up to these speeds a creature might need to loose even more altitude that their Flying Speed rating. Max speed is limited by either the sturdiness or maneuverability of the creature, meaning some flyers will take structural damage before loosing control others will loose control before taking damage. The key factor here is that that flying too fast will have consequences, but from a standard D&D perspective this will mostly happen at speeds too high to be

included in an encounter played out on a tabletop or VTT. Situations like this is why I prefer to have scenes in my VTT that cover a mile or more.

Most flying creatures also have a minimum safe flying speed, this is usually due to the need of enough airflow to be able to generate enough lift and/or to control their trajectory. Flyers that can hover doesn't have this limitation, and the same goes for most magical flyers. Going too slow and most natural flyers will stall and risk losing control.

Braking, meaning reducing your speed can usually be accomplished very quickly for most natural flyers. By using a combination of wings, tails and other parts of their anatomy as air brakes, and combine it with maneuvering to make use of gravity will slow them down very effectively. The exception to this rule are fast heavy flyers that have very limited maneuverability, which ought to be rare "birds" since it makes flying both less effective and more dangerous. Some magical flyers might be in this category, maybe large beholders have a mass that makes them clumsy flyers.

## Maneuverability

Most flying creatures that fly at their listed Flying Speed need at least four times the squares they occupy to make a U-turn. This means that Tiny creatures that doesn't even occupy a full square are usually able to make a 180 degree turn in the square they occupy, Small and Medium creatures would need 4 squares (15 ft.), a large creature would need 8 squares (40 ft.), all the way up to a Titanic flyer that would need 20 squares (100 ft.). Creatures that fly at half the speed would require half the number of squares to make the turn, and so on down to their minimum safe flight speed.

## Stall and Overspeed

Flying creatures that fly too slow or too fast will (in most cases) stall, which means it is losing control. A stall that are induced by flying too slow are fairly straight forward to recover from, let the creature use their reaction to make a Dexterity Saving throw that should have a fairly easy. This is equivalent to a walking creature stumble, and a natural thing for flyers to recover from, but they will lose as much altitude as they need to make a U-turn.

Overspeed is a more serious situation. Flyers that for some reason gets into a situation where they are overspeeding might lose their ability to maneuver, take damage or worse not be able to see or use other senses properly. The wings of a creature might be too delicate to safely reduce the speed and damage might be taken if the situation is not corrected fast. Remember that it is effective mass vs. drag that cause the speed increase and the speed will increase until the induced drag are high enough to stabilize the speed. Most flying creatures are adept at handling this situation too. I suggest you let a creature that end up overspeeding first make a Dexterity Save to try and regain control, and then a Strength Save to try and to use their wings and (and other usable parts of their anatomy) to reduce speed. Both of these saves should be in the easy range as well, it is the increased risk of a double fail that can potentially make this situation dangerous. If they fail both saves they can try again next turn but at a disadvantage.

If a creature hasn't recovered (or hit the ground) after two rounds of losing control, start treating it as a falling creature that has a harder time recovering from the increased speed, and trying to do so might cause some amount of damage. I would let a flying creature try to recover from a fall all the way to the ground but do so at a disadvantage up until it is too late and it will hit the ground. Falling damage should be

considerably less for most flying creatures, they usually weigh less and have more drag when falling even when they are unconscious.

## Sight

Flying require very good situational awareness, and this is critical when flying fast. We land based creatures are scared of falling, when you are flying, its flying into things you don't see or are unable to maneuver away from that pose the biggest risks. This fact can be used very effectively when you try to defend yourself against an attacking dragon for example. Trees, buildings and a lot of other forms of terrain are often enough to keep a dragon at bay.

Flying safely requires visibility that are at least twice the U-turn distance needed by the creature, which means that most dragons require 300 ft. or so of visibility to take to the air in the first place. Exceptions would be this dragons that can see through clouds like Silver Dragons, giving them an advantage.

Keep in mind that cover from vegetation, buildings and such are usually weak from a top down perspective, but very strong from some (non vertical) distance away. This means you can fairly easy hide in a forest of a town, except from a dragon circling or hovering straight up. Most flying creatures have a very well developed eyesight, they need it both for flying safely and avoiding predators or finding prey. A dragon should be able to spot a human out in the open from miles away, but miss one in a forest even when they fly over the treetops.

## Weather

Weather affects flying creatures very much, it is the environment they live in. The very air moves and that affects their movement rate, turbulence might reduce their maximum safe speed and their ability to stay in the air at all. A storm would ground most flying creatures, even dragons, especially if it comes with lots of clouds, rain, snow, hail or lightning.

Wind speed should be calculated in feet (and also squares) per round to make it useful.

### Raw Wind Speed Conversion Table

Miles/Hour	Feet/Second	Feet/Round	Squares
10	14,7	88	18
20	29,3	176	35
30	44	264	53
40	58,7	352	70
50	73,3	440	88
60	88	528	106

The raw values are too tough for standard D&D Rules, so I suggest adjust these numbers to work better with the game.

Beaufort Scale	mph	Adj Feet/Round	Adj. Squares/Round
Light	1-10	1 - 20	1 - 5

Beast Scale	11-20	Adj. 21-50	Adj. Sq. 6-10/Round
Strong	21-30	51 - 100	11 - 20
Gale	31-45	101 - 150	21 - 30
Storm	46-75	151 - 250	31 - 50
Hurricane	76+	251+	50+

If you use these adjusted numbers for windspeed most creatures are affectively grounded in Gale winds or stronger, since few of them have a flying speed of more than 100 ft. Some have flying speed up to 150 ft. or so making them ride out a gale and able to stay airborne in a storm, but will not be able to move effectively against the direction of the wind.

Another issue are landing in strong wind and turbulence. This can be outright dangerous and require a Dexterity Roll or Saving Throw to avoid damage.

## Stamina

The ability to stay in the air for long periods varies a lot between flyers. Some only use flying as a way to hop between branches or for short intense flights, like humming birds or bumble bees. Others can practically live in the air constantly on the wing, like albatrosses and vultures, using weather to aid them. Some dragons might be tired flying a few miles, others might be able to stay up for days on end.

The same goes for what altitude flying creatures can (or are interested in) climbing too. It takes a lot of effort to gain altitude using muscle power, natural flyers wo fly high almost universally use some type of weather phenomena to gain height without spending much energy. Updrafts, waves and thermals are the cases in the real world, in a fantasy world you might add in other magical or elemental phenomena as well. Maybe some fantasy creatures migrate seasonally or during their lifetime, this adds interesting possibilities and events to your games.

## Closed spaces

To have to fly in closed spaces can be both an advantage and a problem for flying creatures. The advantage is that there are usually no wind and bad weather indoors or in caves, which can be a huge boon especially small and slow flyers. Large flying creatures probably does best to stay away from all enclosed spaces, except the biggest. Assume that flying creatures with wings have a wingspan that are as wide as they are long, or even wider. Most birds have much larger wingspan than they are long, and this probably holds true for most fantasy creatures that uses natural flight as well.

Large flapping wins require a lot of volume to be effective, but some flyers are adept at flying in vegetation for example. Look at woodpeckers and some hawks that hunt in dense forest, they are able to maneuver well with their wings partially folded. This is most useful in a dive, and will reduce their ability to climb or power forward. But some dragons and other creatures might be hunters specialized in cramped spaces.

## Carrying Capacity

One of the most limiting factors for flying creatures (and machines) are their ability to carry things. If you as a DM are scared of PC's flying around everywhere would be overpowered and ruining your campaign, you

should look into using encumbrance and a bit of realism. A rule of thumb could be that a flying creature could only carry half, or even a quarter of the weight that would make a creature who walk to have to loose movement rate, before losing their ability to fly. Remember that a flying creature can still glide with a heavier load, the problems is to not loose altitude. So an Aarakocra can probably not have much in the form of armor or heavy weapons and be able to take off, but carry much more of a load and still jump off a high cliff and glide down to safety a distance away.

These are a first look at my ideas around flight in my games, I think it is an underused and often misunderstood and mistreated aspect of fantasy roleplaying that deserve a new look. A bit more realism paired with aspects that can make flying and flying creatures more multifaceted, more dangerous and at the same time vulnerable and limited. I hope this blog post will make you interested in using more flying creatures in your games.

I will try and codify these thoughts into a more robust set of rules that can be used with various editions of D&D (and similar RPG's).

