

# 4 Most Common Causes of Drone Claims



Operating drones commercially can be fun and profitable. They simplify tasks, reduce labour costs and can increase efficiency or productivity. The benefits of drone technology are extensive, and with each new iteration there is a significant enhancement on versions that have come before.

Unfortunately, when things do go wrong with drones the consequences and costs can be significant. Here we look at the four most common causes of drone claims we see.

## HARDWARE

Drones are complicated pieces of machinery, and often we see accidents related to hardware malfunctions.

### Battery life

Having a charged, functional battery is arguably one of the most important aspects of flying a drone. The lifespan of a battery can be altered by overcharging it or regularly running it till it's flat. This is often referred to as how many times the battery has been recharged (Cycles).

Recommendations tend to vary, but it is suggested not to dip below 20-30% charge as a general run, and when using a new battery for its first 5 flights, try to avoid going below 40%.

### GPS signals

Another common hardware failure we see is with GPS signals. In some areas that have high magnetic interference the signals can impact the drones built-in GPS system, reducing its ability to return to base if the operator loses sight of it, or if the batteries are low. Magnetic interference can be caused by a variety of sources including high voltage power lines or underground cables.

Geographical factors such as rocks or walls can also disturb GPS signals in what are known as GPS deprived environments.

## **SOFTWARE FAILURE /LOSS COMMUNICATION**

Software problems can also occur which can lead to flight complications and drone damage.

'Lost link' is a term used to describe the loss of the control link contact between the pilot and the drone, meaning the operator can no longer manage the UAV's flight. As a result, avoiding mid-air collisions or simply landing the drone safely become incredibly difficult (if not impossible). This can also result in a 'flyaway' where the drone continue to fly beyond where the operator can see it and will simply fall to the ground when it runs out of power.

The loss of communication with a drone can be caused by several factors, such as the failure of a propeller or motor, electromagnetic interference or simply a software glitch that causes the drone to malfunction. When drones lose signal you can often activate the return to home (RTH) command but if the operation system is compromised or you haven't specified an RTH altitude it could crash into objects like trees and get stuck in branches – so make sure you've checked those settings prior to flying!

## **WILDLIFE/ SITUATIONAL MANAGEMENT**

It's important for operators to carefully assess the areas they intend to fly in before launching their drones. In the case of wildlife although bird attacks are infrequent, they can happen and severely damage drones. It is also important to watch out for flocks of birds flying so your drone doesn't cross their path.

We have also found that adding a colourful reflective strip to black drones can lower the incidence of aggression from territorial birds like Eagles.

Other factors like careful flight planning to avoid obstacles or losing sight of the drone, and carefully evaluating weather conditions are all important elements of minimising risk. Drone pilots should also know that when confronted with a bird attack, one emergency measure is to fly rapidly, vertically. Birds tend not to fly vertically and it may prevent the drone from being taken down.

## **PILOT FATIGUE**

Pilot fatigue is another cause of drone claims we see. Especially during commercial jobs such as an inspection the pilot can begin to feel fatigued as they've been flying and rigorously concentrating for an extended period of time. In these cases, when the operator begins to feel exhausted, they may not be as careful in their operations and can cause the drone to crash or does not execute a safe landing. Depending on how long and where you intend to fly your drone for, having a second person with you that can swap in as an operator is a good idea. Also mapping your flight path ahead of time and marking 'emergency landing' spots in the event of fatigue can also help prevent damage to your drone.

Flying drones can be a complicated business with a variety of factors coming into play. The most common causes we see for drone claims can often be mitigated with careful planning and pre-flight checks, but we realise even the best made plans don't always work which is why Precision Autonomy offers a range of insurance plans to protect you and your equipment.

**Further Reading:**

<https://www.businessinsider.com/drone-accidents-due-to-tech-not-human-error-2016-8?r=AU&IR=T>

<https://www.heliguy.com/blog/2014/12/16/drone-crashes-top-5-causes/>

<https://www.fortressuav.com/blog/2018/10/18/drone-problems-3-issues-commonly-seen-in-todays-drones>

<https://store.dji.com/guides/drone-crash/>