Free sample from The Drone Kit & Flight Planner. This is worksheet 5 of 11. Get all 11 worksheets: dronegearsetup.com/kit/drone-kit-flight-planner

Wind, Range & Return Reserve

The margin that gets the aircraft home

Pilot	**Date**
Site	**Forecast wind**

A multirotor can only make progress upwind while its airspeed exceeds the wind, and it burns the pack far faster doing it. A 400 m return leg in still air takes roughly 40 seconds and about 3 percent of a pack. The same leg into a 15 mph headwind can take over two minutes and 10 percent or more.

Wind margin for this aircraft

Input	Your figure	Notes
Aircraft max airspeed (mph)		From the specification
Comfortable wind = airspeed / 2.8 (mph)		
Workable wind = airspeed / 2.0 (mph)		
Do-not-fly wind (mph)		
Measured wind at ground level		
Estimated wind at altitude		Usually stronger than at the ground
Gust factor from the forecast		Plan on the gust, not the average
Decision		Fly / delay / cancel

A drone rated to 15 m/s is comfortable to about 12 mph of wind, workable to about 17 mph, and should not be flown above roughly 20 mph. Measure the wind rather than reading a phone forecast for the nearest airport.

Return to home reserve

Input	Your figure
Furthest planned distance from home point (m)	
Return altitude set (m)	
Time to climb to return altitude (s)	
Return leg time, still air (s)	
Return leg time, into the forecast wind (s)	
Percentage of pack for the worst-case return	
Trigger the return at (percent remaining)	35 minimum on routine work
Home point confirmed and recorded?	

Treat the automatic return trigger as a safety net, not a plan. Set your own number and turn for home at it.

Link margin

Advertised video range figures assume clear line of sight in an interference-free environment. A suburban site typically delivers a fifth to a third of the quoted figure, and dense urban or forested settings less. Video degrades before control does, because video needs far more bandwidth, so a softening picture is the earliest warning that margin is running out.

Check	Observation
Advertised range	
Environment: open, suburban, urban, forested	
Realistic working range	
Distance at which the picture first softened	
Obstructions between you and the aircraft	
Visual line of sight maintained throughout?	

Measure the wind, do not guess it

- **BTMETER BT-100 handheld anemometer**: Twenty dollars settles the argument about whether it is too windy, at the site, on the day.
- **Kestrel 3500FW weather meter**: The version that also gives density altitude, which is what matters for hover performance at elevation.

Current prices and our latest picks for each item: **dronegearsetup.com/kit/drone-kit-flight-planner/gear/**

Researched guidance, not professional advice. FAA weight thresholds, Remote ID rules and airspace authorizations change. Confirm the current rule at faa.gov/uas before you rely on this kit, and treat every figure here as a planning aid rather than an authorization.