



Peregrine

The Peregrine aircraft was designed and built by the Ohio State University for long endurance agricultural imaging missions. The aircraft uses an electrical propulsion system powered by onboard lithium-ion batteries and a brushless motor system in the nose of the aircraft. The guidance system is housed in the fuselage behind the wing. This system is responsible for autonomously guiding the aircraft around a prescribed waypoint grid. The aircraft has a range of 6 miles with the onboard communication systems. This can be extended with higher power communication gear.

The camera bay is housed in the fuselage directly beneath the wing of the aircraft. The bay measures 8"x4"x3". Modifications to the bottom of the fuselage can be performed to fit a variety of payload configurations. External pods can be mounted to the wings for additional payloads. The Peregrine has a maximum payload capacity of 7 lbs. However, for maximum endurance, the payload is limited to 4 lbs.

The aircraft is a hollow carbon fiber monocoque and features removable wings for transportation and storage. The tail design reduces the risk of ground impact and allows for safe landing on rough ground.

This aircraft has successfully operated in a variety of agricultural fields and proven capable of handling unimproved landing sites. The performance specifications are provided in Table 1.

Table 1: Aircraft performance specifications

Empty weight	5	lbs
Maximum gross weight	12	lbs
Power system	Electric brushless motor and Li-ion battery	
Endurance (maximum)	1.5	hrs
Maximum altitude	4000	ft
Top speed	65	mph
Minimum speed	20	mph
Range	6	miles

Table 2: Aircraft dimensions

Wingspan	80	in
Length	54	in
Height	10.6	In
Cargo bay (l x w x h)	8 x 4 x 3	in

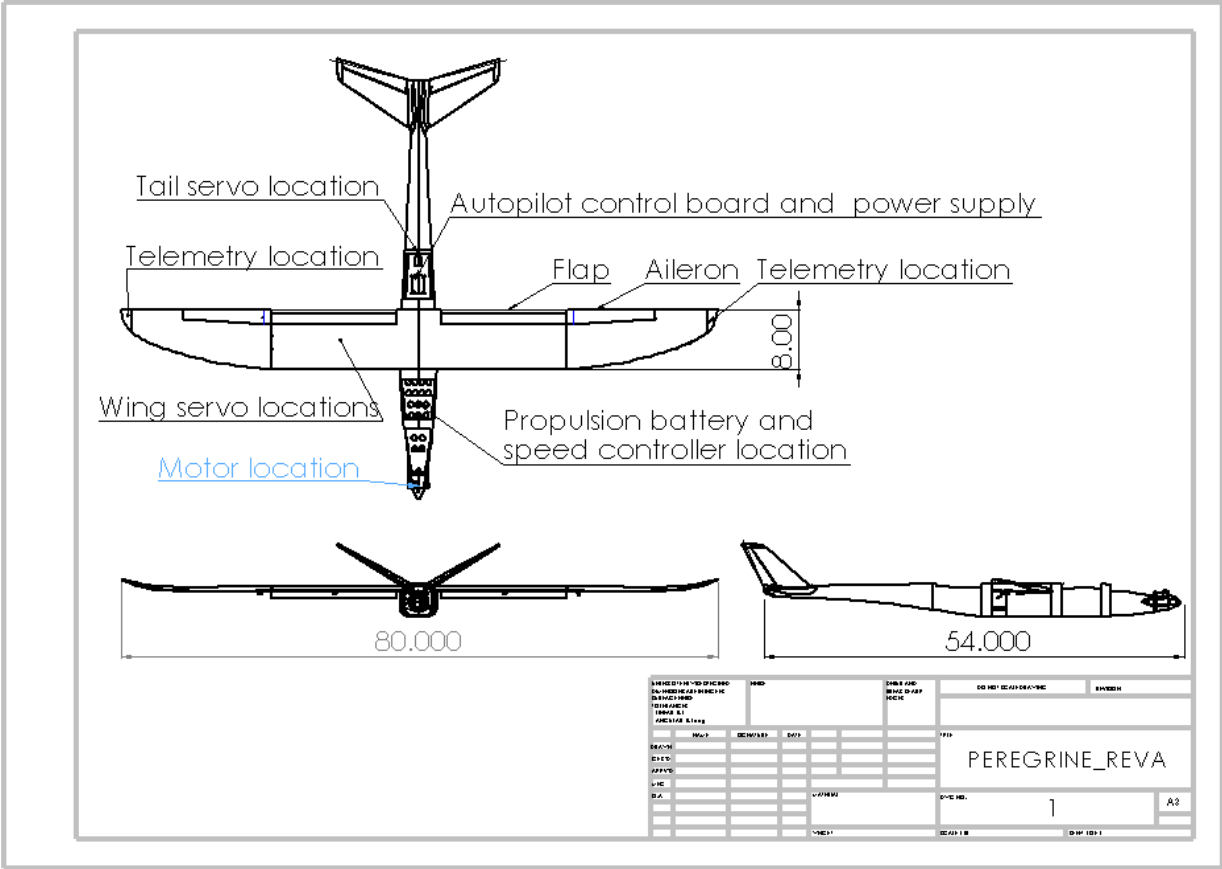


Figure 1: Peregrine dimensions in inches