

Operations Over People (107.39(a)) Waiver Trend Analysis

Waiver Application Elements	Ground Collision Severity	Laceration Injuries	Description of the Operation	Unique Remote Pilot Experience
<p>Sufficient Information</p> <p>--</p> <p>Characteristics of the Operations Over People (OOP) applications approved after requests for additional information</p>	<p>Applicants provided their own impact / injury severity tests for their requested small unmanned aircraft system (sUAS).</p> <p style="text-align: center;">--OR--</p> <p>Applicants chose a sUAS which had impact / injury severity test data readily available and submitted the data in their waiver application.</p> <p>Applicant provided a mitigation that reduced impact severity, e.g. use of an industry standard such as ASTM F3322-18 Standard Specification for sUAS Parachutes</p> <p><u>Note:</u> The FAA has issued other waivers after assessing vehicle design and operational reliability data, with operational mitigations, such as population size and density or the duration of time the small UAS will be over people, to determine the operation could be completed safely.</p>	<p>Applicants provided their own laceration tests for their requested sUAS.</p> <p style="text-align: center;">--OR--</p> <p>Applicants chose a sUAS which had laceration test data readily available and submitted the data in their waiver application.</p> <p>Applicant provided mitigation that reduced laceration injury, e.g. use of an industry standard such as ASTM F3322-18 Standard Specification for sUAS Parachutes</p> <p><u>Note:</u> The FAA has issued other waivers after assessing vehicle design and operational reliability data, with operational mitigations, such as population size and density or the duration of time the small UAS will be over people, to determine the operation could be completed safely.</p>	<p>Applicant proposed operational limitations:</p> <ul style="list-style-type: none"> - Altitude; Airspeed (needed to protect people on the ground) - Time flown over people; population size & density – (minimizing is a plus) - Confined area of operation (most applicants geo-fenced) - Environmental limitations: maximum wind speeds, minimum visibility, temperature range <p>Applicant described operating conditions:</p> <ul style="list-style-type: none"> - Equipment that enhances safety (i.e., prop guards, parachute) - Training taken by Remote Pilot / Visual Observers <p>Applicant described procedures:</p> <ul style="list-style-type: none"> - Contingency actions for system faults (Ex: Return to Home mode) 	<p>Applicants provided an extensive list of qualifications / experience prior to operating over people.</p> <p>Example qualifications / experience that affected approval:</p> <ul style="list-style-type: none"> - Remote pilot certificate - Total hours operating sUAS - Total hours operating the specific make and model of sUAS - Remote pilot specific Ops Over People training and testing to ensure pilot has appropriate knowledge and skills. Applicant provides detailed description / curriculum for training. May include flight training and site training.
<p>Insufficient Information</p> <p>--</p> <p>Characteristics of the Operations Over People (OOP) applications after requests for additional information</p>	<p>Applicants provided:</p> <ol style="list-style-type: none"> (1) Impact / injury severity test data that was not for the specific sUAS proposed for the operation (2) Mathematical formulas and calculations in place of test data which were not sufficient for the operation <p>Applicants stated a parachute will be used, but did not provide test data.</p>	<p>Applicants provided:</p> <ol style="list-style-type: none"> (1) Laceration injury test data that was not for the specific sUAS proposed for the operation (2) A statement that propeller guards will be used, and/or the motors will stop upon impact, but no supporting test data. (3) No mention of laceration injury prevention / test data at all. 	<p>Applicants did not describe enough operating limitations / conditions / procedures.</p> <p>Applicants who mentioned use of return to home mode as a fail safe did not provide method(s) to mitigate the risk of the sUAS entering the path of another aircraft or impacting people or structures while operating in return to home mode.</p>	<p>Applicants stated RPIC has a remote pilot certificate, but give no other qualifications or experience to show the FAA the pilot could safely operate over people.</p>