

Evaluation of Foam Plane under 200 grams for Aerial Photo Survey

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We are conducting experiments for utilizing small UAVs for natural disaster risk assessment, monitoring and response. Japanese Civil Aviation Law was amended on December 10, 2015 to more strictly regulate small unmanned aerial vehicles. Now we cannot fly UAVs above populated areas, beyond visible distances, and before sunrise or after sunset without permissions of Civil Aviation Bureau. The freedom of using UAV has now been considerably limited by the new law.

The regulation applies to, however, 200 grams or larger aircrafts only. Those below 200g are exempt from the new regulations and you can fly them anywhere without permission except airspace near airports and above 150m ground altitude. Also the lighter equipment is the safer when it crashes. Styrofoam plane of pusher type, with a propeller facing rear, under 200 gram is almost harmless when they crash. We therefore need to evaluate the performance of under 200 gram fixed wing foam planes. Our preliminary experiment shows it can fly 5 minutes in 30km/hour at 50m ground altitude. The 2.5km flight range is long enough for small scale surveys.