Drones: Reducing Risks and Encouraging Participation in an Emerging Field, Utilizing a Parachute Deployment System

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The increasing use of drones by commercial enterprises is creating a growing demand for professional pilots. This demand is not being met due to the initial intimidation and expense of purchasing and maintaining drones. Drone crashes are inevitable when an inexperienced hobbyist is at the controls. All professional drone pilots were once hobbyists. Therefore, the goal of my research and testing was to design a parachute deployment system that would reduce risks associated with learning to fly drones. Fabrication of the system included designing a parachute deployment module in CAD and utilizing a 3D printer to allow for multiple iterations for optimizing durability and weight. The canopy was made from a low-cost plastic, furthering the ability to design and test many variations. In order to ensure the practicality of the product, the impacts of the system's weight on the drone's flight characteristics were tested. The system was shown to have little to no effect on the flight characteristics of the drone. This favorable outcome, combined with last year's findings that the system slowed the descent of the drone by 75%, suggests that this is a viable product. Reducing risk by providing a more forgiving system will encourage aspiring drone pilots to develop an interest in the hobby, presumably leading to an increased number of professional pilots. Further development will include a multitude of attachment systems and varying canopy sizes.

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