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Debriefing

Use of Fire-Extinguishing Balls for a Conceptual System of Drone-Assisted Wildfire Fighting

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—This piece of literature is about the use of the Unmanned Aircraft System (UAS) to fighting wildfires. Even though that along with their review they recognize the already establishment of remote sensing technologies in the traditional firefighter manner of coping with wildfire, these authors aim was to incorporate a new element, fire extinguishing balls. Therefore, to make their case, they needed to test the efficacy of their approach in real conditions. It is part of that work that is presented by the authors through this article. Note that their ideal way of fighting wildfire encompasses: (1) scouting unmanned aircraft system (UAS) to detect spot fires and monitor the risk of wildfire approaching a building, fence, and/or firefighting crew via remote sensing, (2) communication UAS to establish and extend the communication channel between scouting UAS and fire-fighting UAS, and (3) a fire-fighting UAS autonomously traveling to the waypoints to drop fire extinguishing balls (Aydin et al. 2019).

—Based on these authors reasoning the flame length and wireline intensity are the salient barometers in coping with a wildfire. In effect, they assert that short grass' wildfires are the most troublesome. Moreover, they pinpoint some of the flaws with the traditional utilization of water in fighting building fires: destroying buildings, and risk of exacerbating the fires by destroying reserves of flammable liquids. It is around these arguments they have crafted their approach of incorporating fire extinguishing balls in substitution the water usage. In the form, their vision seems remarkable, but when critically observing their experimentation, we immediately remark its flawed character. This apprehension a reader can feel, unfortunately, is sustained by the quality of their results.

—The fragility of their work begins with the environment of their experimentation. The setting and the materials used are inadequate and lack of objectivity. It is here that readers would perceive the authors' overstatement of their goal in this article. The reality is that their focus was to test the degree of efficacy of one of the fire extinguishing balls on the market (AFO) instead of their announced purpose of studying concurrently the UAS, remote sensing and fire extinguishing balls to fight wildfires. After witnessing the lamentable failure of their experimentation, Aydin et al. (2019) take pride in the apparent success of the fire extinguishing balls on the short grass fires. According to their discussion, this result seems unexpected since their targeted domain was building fire fighting.

—The second part of their methodology was the interview firefighters, and obtain their professional opinions on the effectiveness of the fire extinguishing ball. The goal of the interview was to gain a sort of support on the fire extinguishing balls. Contrary, they come to the evidence that they were overrating these balls. All they seem to have was a possible “scout” role for these fire extinguishing balls. These balls might be useful in slowing down the fire before firefighters come on site. This strategy would prevent fires from spread to buildings and fuel reservoirs.

—Intellectual honesty obliging, these authors briefly reorient their interest in this article (testing the efficiency of the fire extinguishing balls) and expand on the next steps, the construction of UASs fire extinguishing balls carriers. Here again, there were some reserves about the constitutive materials enumerate. We are talking about the batteries autonomy (duration) in rapport to the distance between firefighters base and the fire scene. Plus, these authors did not make any allusion to the capability of the batteries and other materials of the UAS to sustain fire intensity environment. At our standpoint, we and probably most readers as well could perceive these so call UASs fire extinguishing balls carriers representing fire hazards themselves.

—In sum, Aydin et al. (2019) idea of finding an alternative to efficiently fighting wildfires in wildland-urban interface zones could be innovative. Through the approach of experiencing it lets readers perplex. The organization of the article is acceptable, but the poignancy of it fade away when the material and methods utilized are not convincing, and some critical terminologies used undefined. Fortunately, this work has permitted the authors to have an in-depth understanding of wildland-urban interface zone fires leading to the reorientation of their objective, focusing their experimentation on short grass, timber litter, and chaparral fires. And of course, they would as well revisit the materials they would be utilizing.

Reference

Aydin, Burchan, Emre Selvi, Jian Tao, and Michael J. Starek. 2019. Use of Fire-Extinguishing Balls for a Conceptual System of Drone-Assisted Wildfire Fighting. *Drones* 3 (1): 17. doi: <http://dx.doi.org/10.3390/drones3010017>