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Drone Applications in Athletics

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Abstract

The use of drones in athletics has been steadily on the rise in the past decade. Athletic teams can utilize this technology to see angles of the field that they were unable to see before. Aside from the players, drones also help viewers at home watch their games from amazing angles. Some stadiums are even going as far as using drones to deliver food and beverages to spectators in the seats and also disinfecting commonly touched surfaces.

Drone Applications in Athletics

Better Angles in Practice

Since the rise in drone availability in recent years, professional sports teams have been using them to see different angles to identify their strengths and weaknesses. Before drone technology, a lot of teams would film their practices using a camera on top of a tall pole. Often, sports are thrilling because of the speed, strength, distance, and terrain. A standstill camera on the ground simply cannot keep up with the extreme physical nature of athletics. This is where the use of small unmanned aircraft systems comes into play. Drones can fly high above any practice area and capture still images and video that teams can edit and review afterward. The angles achieved b. For example, Stratford High School in Houston, TX, recently started using drones to film their football practices and games. Head coach Todd Rankin brought the usage of drones over to the school to help his players study their films from different perspectives (Lapin, 2020). The success that comes along with drone usage in sports is because of their accurate tracking of players and objects. They provide an aerial view that gives managers and coaches a much clearer picture of the team's position and movement (Tebreham, 2018).

Fan Viewing Experience

With the development of new technology, fans are viewing a one-of-a-kind experience in their own homes. The sports broadcasting industry aims to provide a product that takes viewers as close to the action as possible. The use of drones in the industry began in 2015 when ESPN trialed drones at the X Games. In the same year, Fox used them for their coverage of the APA Supercross Series and during the PGA's U.S. Open. Director of technical operations for Fox Sports, Brad Cheney, talked about the efficiency of drones, "If we can track a motorbike

doing 30-40 mph, we can track anything in sport. We can certainly track a wide receiver only doing 19 mph.” (Use of Drones, n.d.) The drones can produce high-quality video that is ideal for live television. They use lightweight cameras and real-time high-definition video downlinks. Their real advantage is their flexibility because they easily allow the broadcastersto change the location of the camera angle and shot (Hearn, 2017).

Aside from the great benefits that drones contribute to sports broadcasts, there are some issues and safety factors that have to be taken into serious consideration. There have been numerous drone accidents in the past decade at major sporting events. This not only poses a large hazard for the participants but also the crowd. In September 2015, a drone crash-landed inside the University of Kentucky football stadium before the game started. A drone crash also disrupted the playing of the U.S. Open when it occurred in the seating area (Talanova, 2015). Luckily, no one was hurt during either of these but with the increase in usage in broadcasts, operators must know the risks involved and do everything possible to mitigate them. Overall, drones provide a unique viewing experience for fans at home. They can broadcast angles previously unheard of.

Food and Beverage Service

Stadiums and arenas all over the world are constantly looking at ways to improve the fan experience. One of the big money makers for these venues is food and beverages. According to a study done by Oracle’s Food and Beverage unit, fans are becoming increasingly frustrated with outdated concession stands. They are even willing to try a new range of technological methods to speed up their food and drink orders, so they do not have to miss any of the action. On average, US fans spend \$42 per game on food and beverages, and more than half of those say that they

would spend an extra few bucks to have their wait time cut shorter (Preston, 2019). In recent years, National Geographic has hired architects to design the “stadium of the future.” Included in this model is drone delivery of food and beverage (Connor, 2017).

Disinfection of Stadiums

During the Covid-19 pandemic, stadiums and arenas have turned to the use of drones to disinfect seats and other commonly touched surfaces. Atlanta, Georgia’s Mercedes Benz Stadium was the first stadium to use such technology. The small unmanned aircraft were used to disinfect the seating bowl, glass partitions, and handrails before and after games. By using this technology, it allowed for a 95% reduction in time spent cleaning by hand. The manager of building operations at Mercedes Benz Stadium, Jackie Poulakos, said, “This stadium is incredibly large and as we begin to slowly welcome fans back, these drones allow us to maximize the time between games and private events to thoroughly sanitize” (Kim, 2020). The Atlanta Falcons were not the only team to use drones. The Carolina Panthers and the Washington Football Team similarly used them in their stadiums (Scibilia, 2020). More recently, to prepare for their upcoming 2021 season, the Texas Rangers also used drones to sanitize their stadium for fan and player safety. The person behind this idea and its operation was not a health or stadium official. Instead, it was the Rangers’ bench coach Don Wakamatsu. Growing up on a farm and seeing the benefit of spraying chemicals, Don realized that with the explosion of drone technology, it was both environmentally friendly and efficient to sanitize the stadium with the small aircraft (Wagner, 2021).

Conclusion

In conclusion, there are several applications for drones in athletics and stadiums. They are being used in practices for coaches and teams to get a better view of their positions and play on the field. Although there are a lot of safety hazards, television broadcasters have been implementing drones in their coverage of events, giving the viewers a better overall experience. Food and beverage services at games may someday be executed by the use of drones. They are also being used in the Covid-19 pandemic age to disinfect stadiums to give fans a more safe and healthy experience.

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