

Roll Call Training Bulletin

Produced by: Officer Steve Lewis, Metro, UAS Manager Prepared by: Officer Nick Bassett, PSU Katherine Lester, Chief of Police Volume 25-13

UAS Detection and Mitigation

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The relatively low cost and ease of operation has increased the public's use of Uncrewed Aerial Systems (UAS) in recent years. While most operators are hobbyists seeking a better view of an event, or private companies in the course and scope of their business, there are some concerns of these systems being used for nefarious purposes. In overseas conflicts as seen in this YouTube video, participants have been using small UAS that are difficult to track to deliver explosive devices against their adversaries: The Low-Budget Tech That Redefined Ukraine's Fight. While this is an extreme example of their use, it is possible this technology can be used in a terrorist act domestically. Of concern, would be if a UAS were to be utilized in such a manner against one of the many outdoor events the city hosts every year.

The Sacramento Police Department (SPD) currently has equipment to detect and identify small UAS, but we cannot mitigate (take control of, force to land or change the course of) their movement. Title 6 of the United States Code allows the Departments of Defense, Homeland Security, and Justice to mitigate a UAS with the approval of the U.S. Attorney General. Congress is aware of the potential threats UAS pose to our communities but there is no current legislation to help local first responders deal with them.

There are numerous types of UAS that are available for the public to purchase, so it is not uncommon to see them being operated. These units will have a remote ID and have the ability to be tracked. However, there are also UAS that are "home-built" and lack tracking ability without the use of a RF tracking antenna. If officers were to observe a UAS over or near a large outdoor event, a concern would be if there is anything hanging underneath that is clearly not a camera or sensor, has a visible reservoir capable of holding a liquid with visible sprayer heads or is a "home-built" type.

Pictured below are examples of a DJI brand UAS with a camera clearly visible. The UAS on the left is regularly seen over the Golden 1 Center for producing footage for events at the arena:







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Pictured below are various Lidar sensors visible on UAS that are used for scanning or 3D renderings:



Pictured below is an Event 38 aircraft that has a 10-foot wingspan and 4-foot length, takes off vertically and then transitions into forward flight. These are commonly used for mapping and are also used by law enforcement, including SSO locally:



Pictured below are examples of a "home-built" type UAS:





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Pictured below are two different types of UAS with sprayer applications that are used in commercial agriculture or vector control applications:



If officers were to observe a "home-built" or sprayer type UAS being operated in the vicinity of a large outdoor event, they should notify the district sergeant and continue to monitor the UAS's movements. The sergeant and watch commander can discuss options and if they determine it to be a public safety threat, formulate a plan to mitigate the UAS, if necessary.

If an officer or CSO is dispatched to a report of a theft of a UAS with a sprayer capability, please notify SPD Air Operations and the Criminal Intelligence Unit of the report. In the report, please note the following if known:

- 1. Make, Model, and Serial Number.
- 2. Remote ID Number.
- 3. Was the UAS remote control also stolen?
- 4. Were any pellet or liquid form chemicals or larvicides also stolen?
- 5. Was the UAS configured with a spreader attachment for pellets or liquid tanks for spraying?
- 6. Can the spray tanks be set up to adjust the droplet size to micron levels?
- 7. Is there any video present that captured the theft?
- 8. Where was the UAS stored and who had access to this area?

If you have any questions regarding this bulletin, you can contact SPD's UAS Manager, Officer Steve Lewis, or Air Operations Sergeant Nic Fox.