



Flocks of drones

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By Henry H. Perritt, Jr., RTDNA Contributor

As TV stations consider how to take advantage of the FAA's new small drone rule, they generally assume that stations will fly individual drones to collect news. A photog or multimedia reporter with only modest

training will jump out of his car and launch a drone in less than a minute to provide aerial imagery—at a cost three orders of magnitude less than that for dispatching a news helicopter.

But TV studios and movie sets have multiple cameras. Why shouldn't remote news sites have multiple drones? One covers the stream of water from the snorkel, while another covers the hot spot on the roof, and yet a third covers the effort to prevent the heat from igniting the siding on an adjacent property.

When one has to return for a battery swap, the others cover for it.

Covering the same event with multiple drones makes up for one shortcoming in drone coverage—the limited battery life, resulting in endurance of only 20-30 minutes. It also provides for creative choice. The producer or director decides which shot to put on the air. It is common for ENG trucks, especially satellite trucks, to provide communication pathways to a multiplicity of cameras. An ENG van or helicopter could control a flock of drones.

The technology makes this level of creative choice possible, safe, and affordable but the new FAA rule makes it cumbersome. Multiple drones would require multiple remote pilots because section 107.35 of the rule prohibits a remote pilot from operating more than one drone simultaneously. It does, however, invite applications for waiver of specific limitations. This limitation should join journalism's other targets for

waiver-- the prohibition against flying at night and the prohibition against flying over people.

One remote pilot can safely control multiple drones. Small drones do not require much flying. If the operator takes his hands off the controls, the drone hovers in place; its GPS navigation system, onboard inertial measurement unit, and altimeter automatically compensate for wind speed and gusts and allow it to maintain its height above the ground precisely. When instructed to orbit a point of interest, it does so without any further input from the operator until its battery runs down, at which point, if the operator doesn't do anything, it automatically returns to the launching point for a new battery.

Indeed, the remote pilot could be inside the van watching imagery from the drones and switching among them, while providing occasional control inputs to reposition a vehicle—much as the pilot of an airplane does while the autopilot is engaged. A visual observer could be stationed outside to monitor the overall scene for obstacles or encroaching traffic by manned aircraft or other drones.

The industry can experiment productively with different assignment protocols. Not only one, but two drones can become standard equipment for news vans and other field reporting vehicles. Reporters and photojournalists can prepare for the FAA's new remote pilot knowledge test, which will be available at the end of August. Producers can start envisioning how they want to use more aerial imagery in their

packages.

The principal limitation on the utility of drones for newsgathering is that they have to be transported to the news site by some other means. The limitations of ground transport will continue to make news helicopters desirable. Drones can be adjuncts to an ENG truck, but they can't get there until the truck does. And individual reporters with drones in their trunks can't get there any faster.

Combining news helicopters with news drones may become attractive. Helicopter transport of drones is an idea that has not been fully developed, although analysts and engineers are talking about flocks of drones being guided by helicopter motherships for military and other imaging applications.

Eventually, control from the air would be attractive. A remote pilot responsible for controlling multiple drones from a helicopter would have better visual lines to the drones than he would if he were standing on the ground. He could easily direct their movements with alternating reference to the visual displays and visual monitoring of the overall scene from above.

Conceptually, when news breaks out, the assignment desk would call out a news helicopter, much as it does now. But instead of flying to the scene and gathering imagery with a single onboard camera, the helicopter would launch a flock of drones that would get multiple

perspectives on the scene.

Figuring out who, on the helicopter, controls the drones is problematic. The helicopter pilot can't do it. He's busy flying the helicopter safely. The photog can't do it. She's busy aiming the big camera on the helicopter for the best shots. Maybe a third crew member flies the drones. Or maybe the helicopter doesn't have a big camera and gimbal of its own; maybe it only has drones. Then the photog would fly the drones.

More questions have to be resolved with respect to mother helicopters than with respect of mother news vans. But journalists should be thinking about both of them.

In the short term, drone deployment should not be limited to one lonely newsdrone. The drone should have company.

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