

Letter To the Editor: Public Drone Use and Its Impact on Search and Rescue and Wildfire Operations

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Public use of unmanned aircraft or drones continues to affect emergency response operations in ways that responders, aviation teams, and agencies cannot ignore. Recreational drone ownership has expanded rapidly, and more individuals are flying these devices near active disaster scenes. Although many operators believe they are assisting, uncoordinated drone flights introduce risks that slow operations and place both responders and survivors in danger. As researchers and practitioners working in disaster operations, we have observed a significant rise in uncoordinated drone activity at active response sites. This letter aims to highlight that trend and call on response agencies, regulators, drone manufacturers, and the public to address this issue directly.

The July 2025 floods in the Texas Hill Country demonstrate how quickly these hazards can develop. As helicopter crews conducted hoist operations and reconnaissance in unstable conditions, unauthorized drones entered the airspace. Several near misses were reported, and one rescue helicopter in Kerr County was struck by a drone and forced to land, removing a vital aircraft from service during an active rescue cycle (KSAT News, 2025). Responders noted that unauthorized drones complicated flight paths and reduced available decision time during aerial search operations (DroneLife, 2025; Stokel-Walker, 2025).

Similar interference has been documented internationally. In January 2025 a privately operated drone collided with a Super Scooper aircraft working an active wildfire in California, causing damage significant enough to remove the aircraft from service during suppression efforts (Los Angeles Times, 2025). Unmanned aircraft sightings reported by aircrews indicate a steady increase in unsafe operations, with pilots reporting evasive maneuvers in nearly three percent of encounters in 2025 (Wallace, 2025).

The risks of drone collisions with helicopters or fixed wing aircraft are well established. Federal Aviation Administration impact testing shows that even lightweight drones can damage rotors, engines, or windshields upon impact (Federal Aviation Administration, 2017). When pilots see or suspect a drone in their airspace, they must slow, alter, or temporarily suspend flight operations until the area is confirmed safe, which introduces complex operational risks. These delays also reduce the speed and effectiveness of rescues and wildfire suppression.

Although many recreational operators intend to help, uncoordinated drone flights do not support responders. Incident commanders cannot verify or integrate imagery or data collected by personal drones, and such information may conflict with operational formats or create liability concerns. During Hurricane Harvey, unauthorized drones initially interfered with air operations, prompting the Texas Military Department to warn publicly that “civilian drones pose EXTREME risks to our rescue pilots and crews in high need areas” (IoT World Today, 2017). After this warning, several volunteer drone groups worked with agencies to coordinate flight patterns, ground aircraft upon request, and share imagery only through official channels. This

shift improved safety and demonstrated that civilian groups can contribute meaningfully when they operate under unified direction rather than independently. The DroneUp partnerships used during Harvey further illustrate how civilian operators, when organized and aligned with official command, can support search efforts without adding risk (AirSight, 2017). That experience underscores the difference between organized support and self-directed flight.

Legal restrictions prohibiting drone operation near disaster scenes exist in the United States, the United Kingdom, Canada, and Australia. Enforcement remains challenging. Responders cannot divert personnel to locate drone operators during an active emergency, and counter-drone technologies are not universally available or authorized for local agencies.

Despite these concerns, drones have meaningful value when deployed within coordinated response systems. Agencies in the United Kingdom, Canada, Australia, and the United States use drones to map fire behavior, document search areas, assess structural conditions, and deliver real-time situational awareness. Research from Sweden shows that automated external defibrillator-equipped drones arrived before ambulances in a majority of trials and reduced time to first shock by nearly two minutes, demonstrating the potential of well-integrated drone systems to save lives (Karolinska Institute, 2020).

Emergency response agencies should strengthen public education that emphasizes how unauthorized drone flights restrict aviation safety. The West Midlands Fire Service has set a strong example with its direct messaging urging the public to keep personal drones away from emergency scenes (West Midlands Fire Service, 2023). Regulators and manufacturers should expand geofencing and develop automatic restrictions that activate during declared emergencies. Agencies should also create accredited pathways that allow trained civilian pilots to support operations safely rather than through uncoordinated flights.

Uncoordinated drone flights place responders and communities at unnecessary risk. As severe flooding, drought conditions, and wildfire activity increase across multiple regions, safe and predictable airspace will remain essential to effective emergency aviation. Keeping uncoordinated, personal drones grounded during active incidents is a necessary and achievable step toward protecting both responders and the people they are working to reach.

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