



CAL FIRE & USDA Forest Service (USFS) Joint Aviation Safety Bulletin



Safety Topic: Aerial Firefighting Drop Awareness

With recent wildfire devastation throughout the state of historic proportions, along with predictions of them becoming the “new norm”, the use of aerial firefighting resources are becoming more frequent as well. (Especially Type 1 Large Air Tankers (LAT’s), Very Large Air Tankers (VLAT’s), & helicopters with increased capacity). While these resources have the ability to safely and significantly mitigate wildfire damage to life and property, they also require an increased awareness from the very ground firefighting crews they are tasked with assisting and protecting.

This statewide expansion in wildfire activity has also resulted in a proportional increase in the amount of ground firefighters required to mitigate them. This increasingly results in many municipal firefighters responding to California from other states, and even from other countries. Most of them have wildland firefighting training, but may have little to no exposure to working in the vicinity of these types of firefighting aircraft in such high-risk wildfire environments.

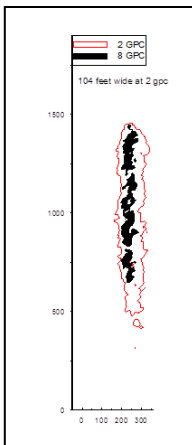
The purpose of this safety bulletin is to provide and review some basic aerial firefighting ground safety information that could help provide firefighters, experienced and inexperienced alike, with some increased awareness when working in the vicinity of aerial firefighting operations.

Please review this information with your crews and pass it on to neighboring agencies as needed.



Apply LCES to Aerial Drops:

- Lookouts:** Trained to identify basic air ops. (See below.)
- Communications:** Maintain contact/awareness with aerial resources. Designate an air-to-ground frequency monitor.
- Escape Routes:** > than one, easily traveled to safety zone(s).
- Safety Zones:** Clear of gravity hazards, enough space for all.



- General Airtanker Drop Size Estimates:**
- Length:** Can vary from 300’ to 1,800’. VLAT’s can drop up to a mile.
 - Width:** Up to: LAT’s 95’, VLAT’s 130’ wide.
 - Minimum drop height above canopy:** LAT’s 150’, VLAT’s 200’ (or higher as agreed to under contract).
 - Weight:** LAT’s can drop a load of retardant that is the equivalent in weight to a Type III Wildland Engine. (Approx. 36,000 lbs.).
 - Safe Margin:** Never directly in front or behind the expected drop line, 50 feet laterally from expected drop zone.

Recognizing Normal Aircraft Behavior:

- Dropping airtankers and helicopters normally drop in a *left* turn rectangle with the sides identified as above. (Downwind, Base, Final. Also, note that some circumstances may require a *right* turn pattern.)
- Another sign of an impending drop is a “show-me” run of a lead plane. Airtanker “Dry runs” may be also conducted to prepare for a “live run.”

Situations that SHOUT watch out: Rising terrain, gravity hazards (trees, limbs, rocks), crosswind to the drop line, no ATGS or ASM on scene managing airspace, no comm with the aircraft or info on the drop zone or when it’s coming, no clear escape route defined. (IF YOU CAN’T CLEAR THE DROP LINE, INFORM THE AERIAL SUPERVISOR AND THEY WILL SIMPLY WORK A DIFFERENT PRIORITY UNTIL THE AREA IS CLEAR.)

- Review the IRPG (www.nwccg.gov) for more on aerial operations and firefighter safety:**
- Hold on to hand tool and away from body.
 - Lie face down, head towards aircraft.
 - Grasp something firm to prevent being blown or carried away. Do not run unless escape ensured.
 - Get clear of dead snags, tops, and limbs in the drop area

Remember that aircraft flying through smoke can have a difficult time seeing ground crews...never assume that they see you. Airtanker and helicopter drops should be safely “rained” in (without tree shadowing) for the desired effect, however there are many variables that can affect this. As with everything on the fireground, it’s important to remember that if diligence to safety and focus on our mission is not maintained, even the smallest firefighting aircraft can cause harm.