

INDUSTRY-WIDE LABOR-MANAGEMENT SAFETY COMMITTEE

SAFETY BULLETIN #36

RECOMMENDED GUIDELINES FOR SAFELY WORKING AROUND UNMANNED AIRCRAFT SYSTEMS (UAS) a.k.a. DRONES

One of the primary uses of Unmanned Aircraft Systems (UAS) in production is for aerial cinematography. UAS can be used to capture scenic shots, complicated shots, and shots that may be potentially hazardous for humans to film. UAS are also used as props, to scout locations, or may even be a part of the story. These guidelines cover the rules and regulations for the safe use of UAS during motion picture and television operations, including, but not limited to, camera platforms, image and data capture, light special effects, location scouts, and when the UAS is flown as a prop.

UAS combines the use of aeronautics, electronics, and wireless transmission technologies through the use of remote-controlled or programmable units. UAS types include, but are not limited to, unmanned single and multi-rotor helicopters, fixed-wing aircraft, small UAS, or micro UAS.

Rules and Regulations

While this safety bulletin details the Federal Aviation Administration (FAA) regulations, other rules may apply outside of the United States, and your company's policies may be more restrictive. Outdoor use of UAS must follow federal, state, and local regulatory limitations or restrictions, including FAA Small UAS Rule [14 Code of Federal Regulations \(CFR\) Part 107](#) (Part 107), and 49 U.S.C. §44807, as well as any Authority Having Jurisdiction (AHJ) regulations, as applicable. Part 107 establishes four (4) new categories of small UAS that weigh less than 55 pounds at takeoff and, under certain conditions for each category, allow for UAS operations over people, moving vehicles, flying at night, and sustained flight over open-air assemblies without the need to obtain a waiver from the FAA.

Details of these categories and required conditions will be covered in *Safety Bulletin #36 - Addendum "A" - Federal Aviation Administration (FAA) Rules & Regulations.*

Guidelines for Operation

1. The Pilot in Command (PIC) is the final authority over the UAS, shall be in command over all flight operations and/or related activities, and shall be certified and trained, as appropriate. The PIC shall have the final authority to abort any flight operation. Abort signals shall be specified ahead of time.
2. The PIC and/or UAS Operator may designate a person knowledgeable of the flight operations to perform the duties or requirements listed in these guidelines, other than operating the UAS.
3. The PIC or UAS Operator, in consultation with the designated production representative, must ensure that any UAS operations will not pose any undue hazards to other people, other aircraft, or other property in the event of a loss of control of the aircraft.
4. Prior to each flight, the boundaries and intended flight path shall be cleared for UAS operations.

5. Equipment and/or aftermarket modifications shall not be attached to, nor altered on, the UAS without authorization from the PIC.
6. Prior to each flight, the UAS should be inspected by the PIC* to determine that the UAS is safe for flight.
7. The PIC* will establish communication protocols with the designated production representative to implement a plan for communications.
8. The PIC* is responsible for determining whether there are any potential radio frequencies or electrical transmissions (devices such as cameras, Wi-Fi routers, and mobile phone boosters or repeaters) that could interfere with the safe operation of the UAS. Production and cast & crew members with electronic or transmission equipment should contact the PIC* to see if it may affect the operation of the UAS.
9. An exclusion zone must be established for the setup, testing, takeoff, and landing of the UAS. This zone shall be cleared of all debris, including trash or anything else that may adversely impact the operation of the UAS. All equipment (e.g., cameras, lights, sound booms) shall be placed at a safe distance away from the zone.
10. Unless authorized by the PIC*, no personnel shall approach the UAS, or enter the exclusion zone, whether the UAS is running or not.
11. Access to areas where UAS are in operation shall be limited only to persons authorized by the PIC. All other personnel shall remain at a designated safe distance. If needed to prevent unintentional entry into potentially hazardous areas, warning signs should be posted and/or other appropriate precautions taken.
12. Never throw anything at or near the UAS.
13. Personal Protective Equipment (PPE), such as earplugs, shall be provided and worn, as appropriate.
14. Appropriate precautions (i.e., fire extinguishers, no smoking) shall be implemented for flammable fuel sources.
15. The flying accuracy of the UAS may be adversely affected by natural conditions such as wind, air density, temperature, gross weight, humidity, and time of day. Conditions such as center of gravity of the UAS, wind (fans), water, explosives, and disturbed airflow can also affect the flight dynamics of the UAS.
16. There may be times when the UAS is used as an airborne prop. Safety precautions for this type of use shall correspond to the risk it presents. Even when used as a prop, the use of the UAS must comply with all applicable rules and regulations.
17. Once the UAS is airborne, no change will be made to the flight plan without authorization from the PIC.
18. The storage and transportation of batteries shall be in compliance with all applicable federal, state, and local laws and regulations and any shipping company restrictions. For

transportation of batteries by air, refer to airline policy and International Air Transport Association (IATA) regulations. Refer to the production company's battery safety policy, and the Industry-Wide Labor-Management Safety Committee Safety & Health Awareness Sheet – *Lithium-Ion Battery Safety*, for additional information.

Briefing/Safety Meetings

Prior to flight operation, the PIC, or a designated person knowledgeable of the flight operation, and the designated production representative, will conduct a briefing/safety meeting for all cast & crew who are expected to work in proximity to the flight operation. Subsequent briefings/safety meetings may be necessary to address cast and crew members' concerns regarding other sequences, changes, and/or additional scenes.

Briefings/Safety Meetings shall include a discussion of the following:

- Possible risks to personnel involved
- Safeguards to personnel, animals, and equipment
- Communications, including chain of command
- Electronic devices and/or other equipment that may interfere with UAS operations
- Emergency procedures
- Abort signals, audible and/or visual, used to halt filming in the event of unforeseen circumstances or safety hazards
- Boundaries and intended flight paths, including designated exclusion zone(s)
- Additional safety precautions unique to the UAS operation that need to be taken, including operations at night, over people, indoors, or in close proximity to cast or crew
- Any intended stunts or special effects during UAS operations
- Obstacles, equipment, and/or locations that may present a hazard
- Federal, state, and local regulatory limitations or restrictions, if applicable

Indoor UAS Use

The indoor use of UAS is not regulated by federal regulations; however, AHJ regulations and employer policies may apply.

1. As a general matter of safe work practices, the "Guidelines for Operation" and "Notification" procedures listed in this document should be followed during indoor UAS operations.
2. Indoor conditions, such as increased heat resulting in reduced air density and ventilation systems, could adversely affect flying characteristics.
3. The PIC* and the designated production representative should evaluate the indoor location for

items such as interior sets, walls, perms/greenbeds, lighting equipment, rigging, cables, Heating, Ventilation and Air Conditioning (HVAC) equipment, etc. These potential hazards should be considered prior to operation of the UAS.

4. Be aware of the proximity of the UAS to cast & crew, and/or a live audience, if applicable.

Notification

The Production Company shall notify all production personnel of the planned use of UAS so that any objection can be communicated prior to UAS operation. Notification can be accomplished by including a statement like the following on the call sheet:

“An Unmanned Aircraft System (UAS) will be used in close proximity to production personnel and equipment. Any personnel who do not consent to work within the UAS area must notify [please insert the assigned production designee(s)] prior to use of the UAS.”

Note: California Code of Regulations (CCR), Title 8, § 11707 restricts minors under the age of 16 from working in close proximity to the functioning parts of unguarded and dangerous moving equipment, aircraft, or vessels, or functioning blades or propellers. Your studio or AHJ may have additional restrictions for minors.

A COPY OF THIS BULLETIN SHOULD ACCOMPANY THE CALL SHEET ON DAYS THAT THE UAS IS BEING UTILIZED.

* Or a person knowledgeable of the flight operation that has been designated by the UAS Operator.