

Helicopter EMS Integration with Unmanned Aircraft

Education for Drone Operators and LZ Commanders

Presented by:
The Virginia State Medevac Committee

Why This is Important to Us

The nature of the HEMS business naturally puts us at risk for mid-air collisions with any other low-level aircraft due to the fact that we have:

- On demand / unscheduled take-offs and landings with
- Time sensitive emergencies in
- Landing areas with limited security, resources, and communications

Additional concerns:

- Delays
- Patient privacy

Number of drone operators are increasing faster than HEMS and the FAA can provide awareness education and / or safety recommendations / regulations.

[FAA Database](#)

Why This is Important to Us

Example of a towel in a tail rotor.....



So what kind of damage could a drone do??

Why This is Important to Us

Examples of a bird strike.....



So what kind of damage
could a drone do??

Keeping Our Shared Air Space a Safe Air Space

The Virginia State Medevac Committee recognizes the utility of unmanned aircraft (drones), and their increased presence in our national airspace system.

In the spirit of working together to ensure safety and privacy for patients and personnel, the Virginia Office of EMS has worked with Helicopter EMS programs in the Commonwealth to develop four key points for Landing Zone (LZ) Commanders and Helipad Security Personnel.

Classes of Drone Operators

Rules are different, depending on the purpose for which the drone is being flown.

- Hobbyists / Recreational (Section 336 of PL 112-95)
- Business (compensated) Operators (Part 107)
- Public Use (COA)

Note that the same drone can be flown by the same operator for different purposes and that rules are dependent upon the purpose of each flight.

Section 336 of PL 112-95

Known as the FAA Modernization and Reform Act of 2012)

Guidance for the **Recreational Users**

Least stringent of all the rules for the different classes

Section 336 of PL 112-95

- Fly below 400 feet and remain clear of surrounding obstacles
- Keep the aircraft within visual line of sight at all times
- Remain well **clear** of and do not interfere with manned aircraft operations
 - **“CLEAR” can be subjective (no rule to land the drone)**
 - **Because there is no 2-way communication with these operators, most HEMS pilots will simply hold their position until the drone has landed, which leads to delays.**
- Don't fly within 5 miles of an airport unless you contact the airport and control tower before flying
 - **NOT ASKING PERMISSION - JUST ADVISING**
 - **We educate local drone operators to call the Life-Guard Comm Center directly. 888-377-7628**
- Don't fly near people or stadiums
- Don't fly an aircraft that weighs more than 55 lbs
- Register your drone if it weighs more than 0.55 lbs
 - **Helpful, but only after an incident**
- Can be fined for endangering people or other aircraft

NO RESTRICTIONS FOR FLYING AT NIGHT

Section 336 of PL 112-95

States that non-commercial drone operators must contact the airport operator or the airport air traffic control tower prior to flying within 5 miles of an airport.

- https://www.faa.gov/uas/model_aircraft/

****NOTE**** 49USC defines airports as "landing area(s) used regularly by aircraft for receiving or discharging passengers or cargo"

- <http://www.gpo.gov/fdsys/pkg/USCODE-2011-title49/html/USCODE-2011-title49-subtitleVII-partA-subparti-chap401-sec40102.htm>

Therefore, helipads are being considered airports with regards to the requirement to notify prior to flying within 5 miles. For hospital helipads, drone operators are advised to contact the helipad owner (or dispatch center for those owned by a HEMS associated hospital).

Also, be aware of FAA AC 91 57-A (Model Aircraft Operating Standards) as it references 112-95 and urges (not required) drone operators to fly in accordance with a community-based set of safety guidelines and within the programming of a nationwide community-based organization (CBO)

- http://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_91-57A_Ch_1.pdf

Part 107 (Small Rule)

Released June 21, 2016

More stringent than the rules for recreational users

Applies to **non-hobbyist operators**

Part 107 (Small Rule)

What has changed for business owners as a result of 107:

- **Pilot's license is no longer required (Section 333 exemption)**
 - Now, easier to obtain, so expect to see a sharp increase
 - Knowledge-based exams will not ensure proficiency (no practical exams)
 - Part 61 Pilots take online exam
 - Non-pilots take proctored exam at registered exam site
- **Second person no longer required as the visual spotter**
 - Increased the risks, especially to low flying aircraft such as HEMS

Part 107 (Small Rule)

Comparing to Rules for Recreational Users

all unmanned aircraft operators must yield right of way to manned aircraft

Commercial Operators

- Required to pass a knowledge-based test
- Day time use only
 - Waiver available
- Must maintain visual line of site
 - Waiver available
- Can not fly in the inner ring of controlled airspace
 - Waiver available
- Cannot fly greater than 400ft AGL (based on object being filmed)
- Minimum age to fly (16 years)

Recreational Users

- No tests required
- No restrictions on time of day
- Must maintain visual line of site
- Must advise airport operator before flying within 5 miles of airport/helipad
- Cannot fly greater than 400ft AGL
- No minimum age to fly

Public Use (COA)

- Certificate of authorization or waiver
- Allows for public use aircraft operations in the national airspace system.
- A means for entities to perform operations outside the allowances of Part 107 and 14 CFR
- Allows public use entities to apply to request to self certify UAS pilots

Other Tips

Consider using apps to identify safe areas for flying your drone

- Some drones have an associated app with geofencing (DJI phantom 2 and above)
 - Don't forget to update your software!
- FAA app B4UFly (shows safety areas around helipads):
 - <https://www.faa.gov/uas/b4ufly/>
- Hover app (does not show safety areas around helipads):
 - <http://www.hoverapp.io/>

Take the time to identify areas with TFRs

- <http://www.aopa.org/Flight-Planning/Tfrs>

“Eyes out of Cockpit” concept - Use a “co-pilot” (spotter) to handle distractions such as by-standers and to watch your UAV while you are watching the camera.

Be aware of environmental conditions (wind) and bystanders; both of which can inhibit your ability to fly safely!

LZ Commanders

ASSESS

- In addition to assessing scene safety around the perimeter, a 3-dimensional approach should be taken, ensuring that the area above the scene is safe as well. A standard assessment includes a review of wires and other obstacles in and around an LZ, as well as drones.

COMMUNICATE

- Do not assume that the pilot has a visual on the drone. Maintain open communications with the pilot via radio so that you can report drone sightings as soon as possible to maximize reaction time, even if the drone is stationary.

IDENTIFY

- Identify the drone operator if possible and engage them. Inform them of the boundaries and the requirement to communicate their intent to operate a drone prior to doing so.

LAND

- When in doubt, have the operator LAND THE DRONE. It is always better to err on the side of caution. No video footage is worth the potential risk of an avoidable incident.



1:37 / 2:15

Analytics Video Manager

Save a Life, Land the Drone PART 4

Life-Guard Channel settings 407 views

+ Add to Share More 2 0

[Drone Safety](#)

Legislative Initiatives

2017 SESSION

ENROLLED

1 **VIRGINIA ACTS OF ASSEMBLY — CHAPTER**

2 *An Act to amend and reenact § 27-15.1 of the Code of Virginia, relating to the authority of a fire chief*
3 *over unmanned aircraft at a fire, explosion, or other hazardous situation.*

4 [S 873]
5 Approved

6 **Be it enacted by the General Assembly of Virginia:**

7 **1. That § 27-15.1 of the Code of Virginia is amended and reenacted as follows:**

8 **§ 27-15.1. Authority of chief or other officer in charge when answering alarm; penalty for**
9 **refusal to obey orders.**

10 While any fire department or fire company is in the process of answering an alarm where there is
11 imminent danger or the actual occurrence of fire or explosion or the uncontrolled release of hazardous
12 materials that threaten life or property and returning to the station, the chief or other officer in charge of
13 such fire department or fire company at that time shall have the authority to (i) maintain order at such
14 emergency incident or its vicinity, *including the immediate airspace*; (ii) direct the actions of the
15 firefighters at the incident; (iii) notwithstanding the provisions of §§ 46.2-888 through 46.2-891, keep
16 bystanders or other persons at a safe distance from the incident and emergency equipment; (iv) facilitate
17 the speedy movement and operation of emergency equipment and firefighters; (v) cause an investigation
18 to be made into the origin and cause of the incident; and (vi) until the arrival of a police officer, direct
19 and control traffic in person or by deputy and facilitate the movement of traffic. The fire chief or other
20 officer in charge shall display his firefighter's badge or other proper means of identification.
21 Notwithstanding any other provision of law, this authority shall extend to the activation of traffic control
22 signals designed to facilitate the safe egress and ingress of emergency equipment at a fire station. Any
23 person or persons refusing to obey the orders of the chief or other officer in charge at that time is guilty
24 of a Class 4 misdemeanor. The chief or other officer in charge shall have the power to make arrests for
25 violation of the provisions of this section. The authority granted under the provisions of this section may
26 not be exercised to inhibit or obstruct members of law-enforcement agencies or emergency medical
27 services agencies from performing their normal duties when operating at such emergency incident, nor to
28 conflict with or diminish the lawful authority, duties, and responsibilities of forest wardens, including
29 but not limited to the provisions of Chapter 11 (§ 10.1-1100 et seq.) of Title 10.1. Personnel from the
30 news media, such as the press, radio, and television, when gathering the news may enter at their own
31 risk into the incident area only when the officer in charge has deemed the area safe and only into those
32 areas of the incident that do not, in the opinion of the officer in charge, interfere with the fire
33 department or fire company, firefighters, or emergency medical services personnel dealing with such
34 emergencies, in which case the chief or other officer in charge may order such person from the scene of
35 the emergency incident.

- New: “Including the immediate airspace”

The Future: Legislation Possibilities

- Prohibit drones from night flight
- Prohibit drones within a certain distance of helipads and pre-designated LZ's
- Prohibit the covering of drone lighting
- Require Drones to land when near and approaching / departing helicopter or helicopter in motion(vs. “see and avoid”)

Keeping Our Shared Air Space a Safe Air Space

#LandTheDrone

#SolidarityForSafety