

The Use, Misuse, Penalties and Regulation of Unmanned Aircraft

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Topics to be Discussed

- What are Unmanned Aircraft Systems (“UAS” or “Drones”)?
- How are UAS being used (the good and the bad)?
- How has the regulation of small UAS changed?
- How will the FAA keep pace with the needs of the UAS industry?
- What are the hot legal issues associated with using drones?

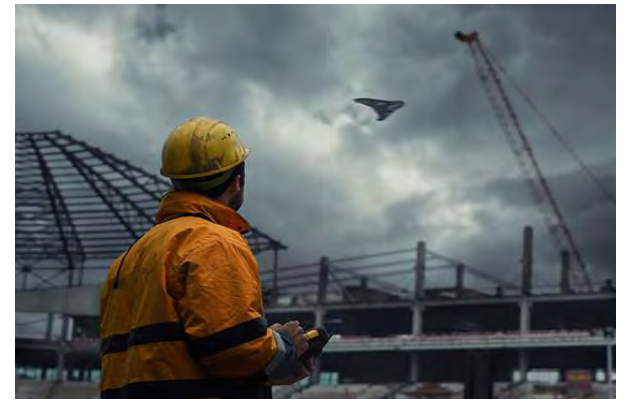
What are Unmanned Aircraft Systems?

- UAS is the Federal Aviation Administration's term for a drone.
- UAS covers powered aerial vehicles including fixed wing and quadcopter.
- Although originally developed in the 1950's for military application, civilian use of drones has recently exploded.



How are small UAS being used?

- Photography/Film & TV
- Real Estate/Construction
- Agriculture/Ranching
- News Gathering/Media
- Security
- Utility Inspection/Maintenance
- Emergency Search & Rescue
- Mining (Gold, Silver, Copper...)
- Insurance Claims Assessment
- Sports (Professional Football)

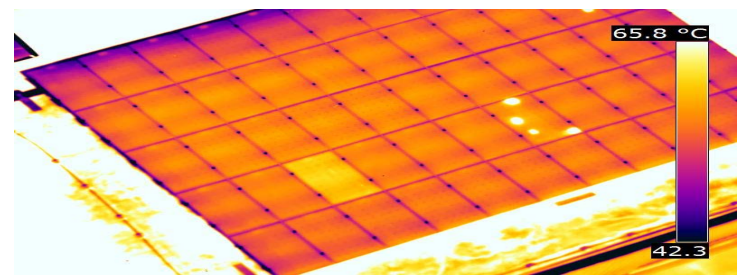
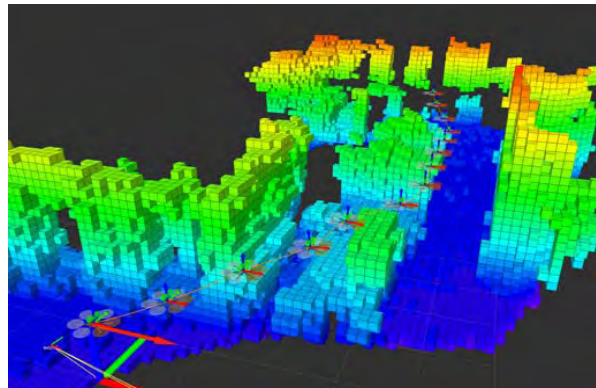
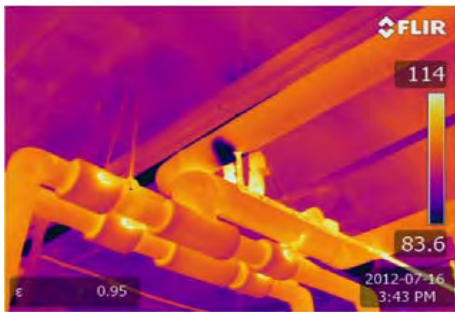
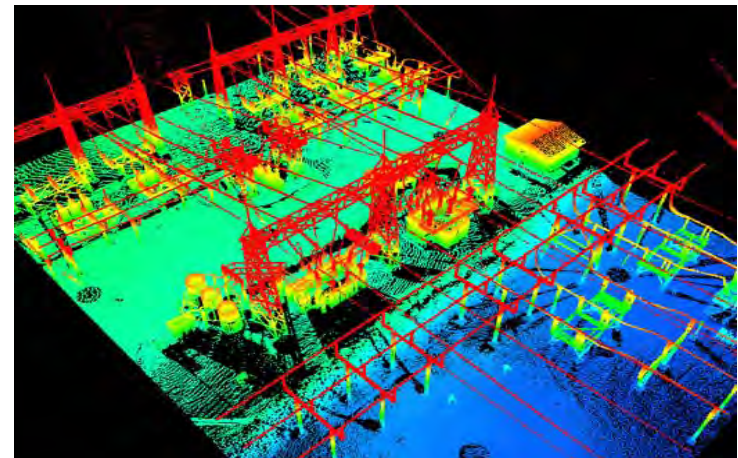
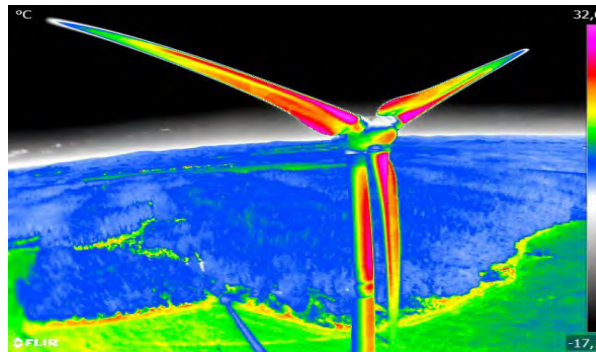
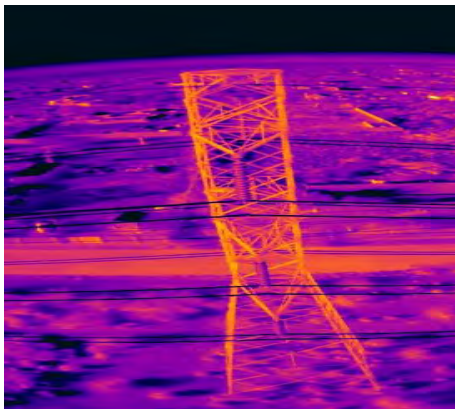


How Are Utilities Using UAS?

- Construction and Routine Maintenance and Emergency Inspection of:
 - Distribution and Transmission Lines, Boilers
 - Substations, Switchyards and Rights of Way
 - Conventional and Renewable Generating Facilities
- More efficient response to:
 - Storm reconnaissance and Outage Damage
 - Vegetation Management
 - Security/Vandalism

Advanced Technologies – Photos & Videos

Using Lidar, Thermography & 3D and Orthomosaic Imagery



Benefits of using a UAS/Drone

- Safer & less expensive than helicopters/fixed wing planes
- Useful for work involving the “3-Ds” (dangerous, dull, or dirty)
- Available on short notice
- Provides more angles of review/closer perspectives
- Recorded data is storable and used across departments
- Anticipated to create over 100,000 jobs in 2016
- Technology is constantly refined for unique industry needs

Misuses of Small UAS

- **First Enforcement Action - \$10,000 – Ralph Pirker**

- Operating an unregistered aircraft
- Operating in careless or reckless manner in close proximity to people and structures and in flight path of helipad at UVA Medical School

Result - Settled for \$1,100

- **Largest Civil Penalty - \$1.9 million - SkyPan International**

FAA alleges 65 unauthorized flights/260 violations in NY and Chicago

- Operating an unregistered aircraft
- Operating in careless or reckless manner
- Operating in airport airspace without: 1) clearance; 2) two-way radio; and 3) altitude reporting equipment

Result - Pending

Old Rules: Square Peg, Round Hole

- The FAA initially treated UAS like any other aircraft and required compliance with all “manned” aircraft requirements
- **Problem:** UAS are inherently different from “manned” aircraft and applying existing regulation to drones jeopardized US role as world leader in technology.
- **Interim Solution:** In 2015, the FAA: 1) Issued Proposed Rulemaking for Small UAS; and 2) Developed a streamlined interim process for entities to obtain exemptions (Section 333 and Section 334) from certain existing FAA regulations.
- **Final Rule** – New Part 107 specifically for Small Unmanned Aircraft

New Small Unmanned Aircraft Rules – Part 107

Part 107 Replaced Section 333 Exemptions

SECTION 333: CIVIL OPERATIONS

- ~~Any UAS used for Commercial Purposes (i.e., receiving compensation)~~
- ~~**Two Step Process:**
 1. Request exemption from certain regulations
 2. To the extent needs exceed “Blanket” Certificate of Waiver Authority (“COA”), request civil COA~~

SECTION 334: PUBLIC OPERATIONS

- Any UAS used for Governmental Purposes (i.e., receiving no compensation)
- **Single Step Process:**
 1. After demonstrating “governmental/ public” entity, request a public COA

Part 107 – Operator Requirements

- Hold a Remote Pilot Airman Certificate with a small UAS rating
 - Demonstrate aeronautical knowledge
 - pass Aeronautical Knowledge Test (every 2 years) or
 - hold a Part 61 Pilot Certificate (with flight review within last 24 months) and complete UAS online training course
 - Vetted by TSA
 - Be at least 16 years old
- Physical/mental health cannot adversely interfere with safe operations of UAS

Part 107 – Operational Limitations

- **Less than 55 lbs** with payload
- **Within Visual Line of Sight** of remote pilot in command or visual observer
- **No flights over uninvolved persons** unless under covered structure or inside a stationary vehicle
- **No operations from moving aircraft**
- **No operations from moving vehicles** unless in sparsely populated area
- **One pilot/visual observer per UAS at one time**
- **No carriage of hazardous material**
- **Carrying load permissible** if secured and doesn't impact controllability
- **Transporting property for hire permitted** if flight is within 1 state (except not allowed in DC or Hawaii)

Part 107 – Operational Conditions

- Daylight hours (or 30 min before or after sunrise/sunset w/anti-collision lighting)
- Minimum visibility 3-miles
- 400 feet above ground (or structure)
- Less than 100 MPH (87knots)
- Yield to Aircraft
- Permitted in Class B, C, D & E airspace (with ATC permission)
- Permitted in Class G airspace (without ATC permission)

Part 107 – Other Responsibilities

- Must register UAS prior to flight & ensure aircraft markings
- Must conduct preflight inspection of UAS (aircraft and station)
- Must make UAS and documents/records available to FAA upon request
- Must report accidents involving serious injury, loss of consciousness or damage to property (>\$500) to FAA within 10 days
- Check local (privacy) laws before gathering information
- No careless or reckless operations

Bi-Partisan FAA Authority Bill Signed by President

13 Sections of Bill dedicated to UAS; 6 Noteworthy Sections:

Sec. 2203 - Manufacturer Safety Statements
\$27,500 per violation for failure to comply

Sec. 2205 - Interference with wildfire suppression, law enforcement, or emergency response efforts \$20,000 penalty for "knowingly or recklessly interfering"

Sec. 2207 - Emergency Exemption Process for catastrophe, disaster, or other emergencies (defined to include "utility and infrastructure restoration efforts") guidance due in 90 days

Sec. 2208 - Unmanned aircraft systems traffic management - FAA and NASA required to develop a plan for UAS traffic management

Sec. 2209 - Applications designation - FAA required to develop a process for entity to request that the FAA prohibit/restrict UAS operations in close proximity to certain facilities (including utility infrastructure)

Sec. 2210 – Beyond Visual Line of Sight Exemption for Energy Critical Infrastructure

What's Next? → First Step to Broader Process

- **UAS Pathfinder Program is continuing to provide tests and research in key areas** (CNN, PrecisionHawk and BNSF are key players in beyond line-of-site, flights over people, airport integration, counter-UAS support technology and low altitude safety infrastructure)
- **Online Portal** - FAA will entertain waivers on a case-specific basis
- **FAA to issue more NOPRs; committed to keep pace** with technological advances – NOPR for Micro UAS expected in December

Hot Legal Issues

- Enforcement parameters already include civil and criminal penalties and revocation of certificate. Presumably:
 - Penalties of up to \$25,000 per violation - 49 U.S.C. § 46301
 - Prison sentence of up to 20 years - 18 U.S.C. § 32(a)(8)
- Privacy, Data Collection, Storage and Security Issues
- Preemption Issues
- Safety and Insurance Coverage Issues
- Industry pressure for new uses/technology - Geofencing