

Game of Drones

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Some Background...

Drones in higher ed?

Why the term Unmanned Aircraft System?



Drones in Higher Education Creating the Future

- Drones are active in nearly all industries
 - Public Safety/Law Enforcement
 - Research/Testing
 - Infrastructure Inspection
 - Film & Television
 - Disaster Response & Insurance
 - Many others
- Institutions of higher learning are heavily involved
- Numerous uses, but all are accompanied by new exposures
 - Research and Development
 - General Education UAV and technology degree programs
 - Campus operations and inspections
 - Student recreation
 - Commercial opportunities
 - Media/Advertising
 - General public flying on/over campus



The Components of an Unmanned Aircraft System

Why the use of the term "UAS"

- The UA or UAV is only one part of the operation.
- The "System" includes some/all of the following:
 - Unmanned Aircraft
 - The air vehicle itself
 - Payload
 - The business end of the system
 - The systems that collect or transmit data
 - Mission Support Equipment
 - Equipment needed to transport, maintain, launch, and recover the UA
 - The People
 - The pilot/operator, visual observer, payload operator, etc.
 - Data Link
 - The communications between the ground and UA
 - The Space
 - Airspace, Air Traffic Control, Weather, and Regulations applicable to a given flight
 - Command and Control
 - Internal/External







U.S. Regulations – The Basics



Three Non-Military Types of UAV Operations

Operational Requirements Vary

- Public Operations (Government controlled includes public universities)
- Civil Operations (Commercial businesses, private universities, non-profits, etc.)
- Model Aircraft (Hobby or recreational use only)
 - Strictly used for hobby/recreation flights
 - Operated in line with general safety guidelines
 - Flights below 400 feet, visual line-of-sight etc.
 - Permission from airport operator/control tower if flown within 5 miles of an airport

Institutions of higher learning could have involvement/exposure to all three types of operations.





Part 107 Highlights Operational Limitations

- Unmanned aircraft must weigh less than 55 lbs. (25 kg).
- Visual line-of-sight (VLOS) only
- Flights over any people not directly participating in the operation, unless they are under a covered structure or inside a covered stationary vehicle are not permitted.
- Daylight only operations, or civil twilight with appropriate anti-collision lighting
- Must yield right of way to other aircraft
- Max groundspeed of 100 mph (87 knots)
- Max altitude of 400 feet above ground level (AGL) or, if above 400', remain within 400' of a structure.
- Minimum visibility of 3 miles from control station
- Ops within Class B, C, D and E airspace are allowed with ATC permission.
- No person may act as pilot-in-command or visual observer for more than one unmanned aircraft at a time.
- No ops from a moving aircraft
- No ops from a moving vehicle unless the operation is over a sparsely populated area.



Part 107 Highlights

Operational Limitations (Continued)

- No careless or reckless operations
- No carriage of HAZMAT
- Preflight inspection by remote PIC required
- May not be flown by an individual if he or she knows of any physical or mental conditions that would interfere with the safe operation of the small UAS.
- External load ops permitted if object being carried is securely attached and does not adversely affect the flight characteristics or controllability of the aircraft.
- Transportation of property for compensation or hire is permitted, but significant restrictions apply.
 - Total weight of aircraft, payload, attached equipment, and cargo may not exceed 55 lbs.
 - Flight must be conducted visual line of sight and not from a moving vehicle or aircraft
 - Flight must be conducted within the boundary of a State



Part 107 Highlights

Remote Pilot in Command Certification and Responsibilities

- Establishes a remote pilot in command position
- Small UAS operator must either hold a remote pilot airman certificate with a small UAS rating or be under the direct supervision of a person who does hold a remote pilot certificate.
- Remote pilot in command must:
 - Make available to the FAA, upon request, the small UAS for inspection or testing, and any associated documents/records required to be kept.
 - Report to the FAA within 10 days of any operation that results in at least serious injury, loss of consciousness, or property damage of at least \$500.
 - Conduct preflight inspection, to include specific aircraft and control station systems checks, to ensure the small UAS is in a condition for safe operation.
 - Ensure that the small UAS is properly registered as required by Part 91.203(a)(2).



What is needed to become a new remote pilot Non-Part 61 Certificated Pilots

- Must be at least 16 years old
- Must be able to read, speak, write and understand English
- Must be in a physical and mental condition to safely operate a small UAS
- Must pass the initial Aeronautical Knowledge Exam at an FAA-approved Knowledge Testing Center
- Complete/Submit form 8710-13 (FAA Airman Certificate and/or Rating Application)
 - May take 48 hours for test passing to be recorded
 - Application likely to be validated by FAA in about 10 days
- Pass TSA security background check
- New pilot receives instructions for printing temporary Airman Certificate (valid for 120 days)
 - Permanent Airman Certificate Arrives by mail.









UAS Facility Maps

- First released in April of 2017 and expanding since
- Show the maximum altitudes around airports where the FAA may authorize part 107 UAS operations without additional detailed safety analysis.
- Facility Maps <u>DO NOT</u> authorize operations informational purposes ONLY
- Operators must apply to operate in controlled airspace







FAA UAS facility map



Registration requirements and some potential penalties

- Registration and markings
 - Applicable to all UAS between 0.55 and 55 pounds
 - New purchases must be registered prior to first flight
 - Now 1,000,000+ drone registrations (878,000+ hobbyists, 122,000+ commercial, public, other)
- Civil fines and penalties are not limited to recreational users.
 - SkyPan International, Inc. FAA proposed a \$1.9M civil penalty in October of 2015, settlement with FAA announced on Jan. 17.
- Violation of a TFR could have very serious consequences
 - Federal prison for up to a year and/or \$100K fine

YOUR OWN CAMPUS MAY FALL UNDER A TFR (NCAA DIVISION I FBS)



Part 107 Waivers

Opportunity for expanded operations

- Presentation of a safety case allows FAA to review and grant certificates of waiver for some of the restrictions outlined in Part 107.
- Waiver request to provide description of proposed use requiring waiver and justification.
- Must apply via online portal at <u>www.faa.gov/uas</u>
- FAA urges applications submitted 90 days before waiver is needed.





What about exemptions and ops not permitted under Part 107? Exemptions will still be available

- Exemptions still be available for operations that aren't addressed under Part 107
- Operators can fly under their existing Section 333 Exemption / COA or under Part 107 at their option.





Exposures and Coverages

Why the need for insurance? How are you or your clients covered today? What might you or they need to change or modify?



"The first step in the risk management process is to acknowledge the reality of risk."

- Charles Tremper



Liability

Exposures

TRADITIONAL AVIATION EXPOSURES

- Bodily injury and property damage
- Consequential losses
- Catastrophic loss potential
- Non-owned use of unmanned aircraft Not all operators are equal
- Personal Injury / Privacy

NON-TRADITIONAL AVIATION EXPOSURES

- Errors & Omissions/Professional Liability
- Cyber
- Civil Penalties
- Reputational Harm



"Lost Drone" search on Google sees some peaks on Christmas Day



Privacy Exposures

- Unreasonable searches/surveillance
- Trespassing
- Invasion of privacy
 - Intrusion upon seclusion
 - Publication of private facts
- Stalking and harassment
- Business privacy







- Personal injury coverage can be considered, but operator should have policies, procedures and guidelines in place for the collection, storage, use, and destruction of data collected by the aircraft, <u>AND</u> have good preflight risk mitigation procedures in place.
- Not regulated by the FAA



National Telecommunications and Information Administration

Voluntary Best Practices for UAS Privacy, Transparency, and Accountability

"Guidelines for Neighborly Drone Use" – a common sense approach

- If possible, tell people you'll be taking pictures or video of them in advance.
- If you think someone has a reasonable expectation of privacy, don't violate that by taking pictures, video, or gathering data without a very good reason.
- Don't fly over private property without permission if you can easily do so.
- Don't gather personal data for no reason, or keep data longer than needed.
- If you keep sensitive data about other people, secure it against loss or theft.
- If asked to delete personal data by someone, do so, unless there is a good reason not to.
- If privacy, security, or safety concerns are raised, listen to them.
- Don't harass people with your drone.





Physical Damage Exposures

- Aircraft
- Payload
- Ground control equipment
- Spare parts

















Real Life Examples Exposures

- Drone crashes into roof of Seattle's Space Needle on New Year's Eve (Roughly 575' AGL).
- 9/21/17: Drone collides with Army Blackhawk Helicopter over Staten Island.
- 9/22/17: Drone accident at Palms Place Resort in Las Vegas.
- 10/12/17: Drone strikes charter plane in Quebec
- 2/1/18: YouTube video shot near Las Vegas
- 2/14/18: Helicopter crash in South Carolina caused by drone? Investigation underway.





War Exposures

- Unmanned aircraft can face war risks
 - Malicious attack
 - Hi-jacking
 - Spoofing
 - Sabotage
- Very different exposure potential than what we have seen in the past





BUYing UAV Insurance

What is the process for getting coverage in place?



BUYing UAV Insurance from the Insured's Perspective The Three Key Players

- Broker
 - They work for you and strive to find the best coverage options available by accessing multiple insurance markets on your behalf.
- Underwriter
 - Works for the insurance company itself and reviews information provided by the broker to determine coverage availability and policy pricing.
- You
 - The information you/the operator provide to your broker, and the relationship you develop with him or her (and in some cases even your underwriter) can be the key to a successful placement. No one knows your operations better.
 - Complete app and provide any additional information you feel tells your story better.





Underwriting Considerations

UAV underwriting is based on traditional aircraft underwriting foundation

- Almost all aviation underwriting stems from four basic points of risk analysis.
 - Operator experience
 - Make and model information
 - Purpose of Use
 - Location of Operations
- Values and limits required
 - Aircraft
 - Payload
 - Ground Equipment
- Operational procedures/risk mitigation items
- Training





Claims Challenges / Claims Handling



Claims Challenges?

New and different

- New exposures/uses represent new claims scenarios
- Regulations and laws (FAA, State, Local)
- Manufacturer assistance
- Maintenance
- Who was the operator/PIC?
- Theft/Fire/Disappearance
- Underwriter/Broker/Insured intent vs. policy language...does it match?
- Valuation of components?
- Prior experience? How many UAV claims have been adjudicated? How many have you handled or helped to mitigate?





Conclusions

The Future is Here



Unprecedented Exposures & New Technology Requires "New" Thought

Shaping the coverage for a truly new aviation exposure

- We are all part of a framework that can play a role in the development of this new segment of aviation. Having an understanding of four key items can help us help the UAV industry today and in the future.
 - 1. Regulations & Operations
 - 2. Exposures & Coverages
 - 3. BUYing UAV Insurance and the Underwriting Process
 - 4. Claims Challenges

Web Resources:

http://knowbeforeyoufly.org/

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





AG Bring on tomorrow

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