

UNMANNED AERIAL SYSTEMS & THE AIRPORT SPONSOR

The Current Regulatory Framework And Practical Considerations

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UAS In The USA

- Airport Lawyers' UAS Min. Standards:
 - Baseline understanding of the many, some of which, yet to be finalized regulations and interpretations
 - Basic understanding of the practical moving parts involved in UAS operations in the NAS
 - Be able to take the above and play a role in identifying major areas of concern to the airport

UAS In The USA

- What we are not going to do this morning is:
 - Make you experts in COAs
 - Make you experts in Airspace Design & Use
 - Discuss for 3 hours the fascinating preemption issues that are presented by the entry of UAS into the world

And No Death By PowerPoint!



The Game Plan

- Overview of The Basic Moving Parts
- FAA Update On Key Matters
- Put Basic Knowledge Into Action and Use Real World Examples To **Get Into More Detail** and Give You Issue-Spotting Tools You Can Take Home Via Hypotheticals
- Get outta here on time

UAS Authority Depends on Use

Public



COA – Certificate
of Waiver or
Authorization

Commercial (Civil)



Section 333
Exemption or
Experimental
Exemption and
COA

Private/Model



Generally No
Prior
Authorization

FAA Modernization and Reform Act of 2012

- Pub. L. 112-95, Feb. 14, 2012
- Safely accelerate integration of UAS into the National Airspace System by Sept. 30, 2015
- Case-by-case approval of public operations
- Reduced burden for model/hobby UAS

Commercial Operators

- UAS operations permitted on case-by-case basis as exceptions to existing law
- FMRA Sec. 333 exemptions – interim authorization of commercial operations until final rule established
- AND
- COA:
 - FAA “blanket” COA – March 2015
 - OR individual, customized, COA

The Airport Sponsor's Concerns

- Safety of Flight
- Risk Mitigation (litigation)
- Managing UAS use on and around the field
- Safety of Flight
- Safety of Flight

Researchers at Virginia Tech's College of Engineering Analysis

- Drones as small as 8 pounds will have “**devastating**” effects if sucked into the turbofan engines of commercial aircrafts.
- Computer-simulated tests showed an 8-pound drone would **rip apart** the fan blades of a 9-foot diameter **turbofan engine** during take-off **in less than 1/200th of a second.**
- The tests discovered that drone debris thrashing about inside the engine could reach speeds 715 miles per hour and could lead to catastrophic engine failure.
- “Because the damage is spread to a large section of the engine, it is **unlikely that it will be able to maintain thrust,**”
- Javid Bayandor, associate professor of mechanical engineering at Virginia Tech and director of the university's Crashworthiness for Aerospace Structures and Hybrids ([CRASH](#)) Laboratory.

UAS Regulation

- Preemption issues are sticky
- Reasonable minds may disagree – fit for a law school exam or law review article
- Only hitting moving parts here today

Federal Control of Aircraft and Airspace

- 49 U.S.C. § 40103 –National Airspace System
- Protect persons and property
- Prevent collisions
 - Between aircraft
 - With other objects
- 49 U.S.C. § 44701(a) – Safe flight of civil aircraft in air commerce
- Regulations
- Minimum standards

Critical FAA Regulations

- 14 C.F.R § 91.119 – Minimum altitudes for safe flight
 - Floor of navigable airspace
 - 500 feet for uncongested areas
 - 1,000 feet for congested areas
 - Necessary for takeoff and landing
- 14 C.F.R. § 91.13 –
 - “No person may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another.”

FAA Regulation

- Part 77 Airspace Protection
 - 14 C.F.R. §77.9
 - Notice to FAA required in instances where a person proposes a construction or alteration that is more than 200 feet above ground level (“AGL”).
 - No FAA-based enforcement power in Part 77
 - Reliance solely upon local zoning & land use

Airport Obligations To Take Some Action To Ensure Safety Of Surrounding Area

- Grant Assurances... oh those pesky grant assurances...
- Grant Assurance 19 states that:
 - The airport ... shall be operated at all times in a safe condition... The sponsor will not “cause or permit any activity or action thereon which would interfere with its use for airport purposes.
- Grant Assurance 20 states that:

The airport sponsor will take appropriate action to assure terminal airspace is cleared and protected by removing existing hazards and preventing future hazards.
- Grant Assurance 21 states that:

The airport sponsor will take appropriate action, to the extent reasonable, to restrict the use of land in the vicinity of the airport to activities compatible with normal airport activities
- How does this translate into UAS World?
- Will these form the basis for establishing a standard of care in litigation?

One More

- Do UAS operations constitute aeronautical activity?

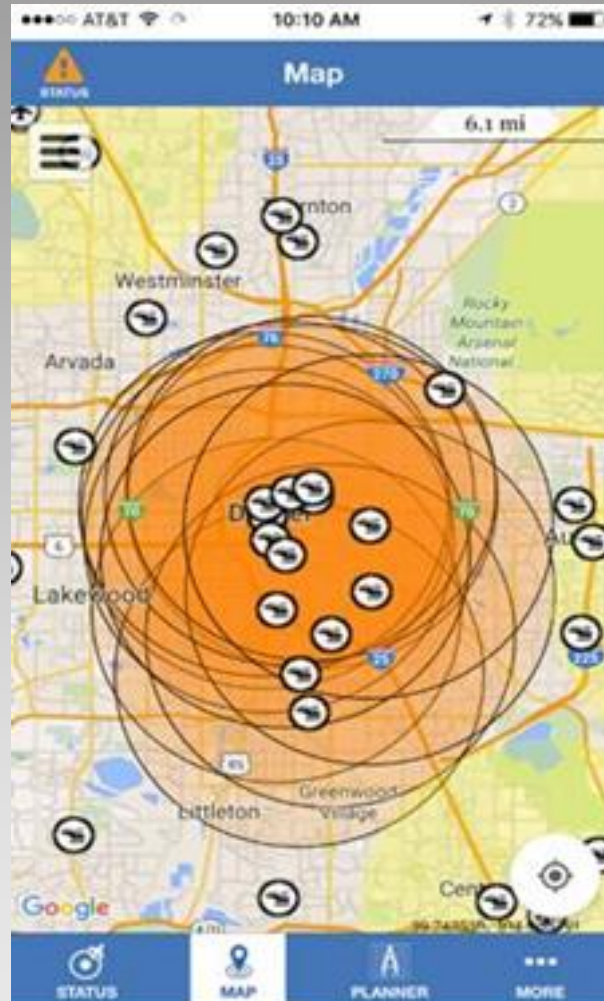
Recreational Users

- FMRA Sec 336 – Special Rule for Model Aircraft
- “...the Administrator of the Federal Aviation Administration may not promulgate any rule or regulation regarding a model aircraft...”
- Under 55lbs, below 400’, notify airport, etc.
- Makes regulation of recreational use of drones tricky for FAA

Sponsors Being Pulled Into The UAS Vortex With The Help Of Technology

- Statute says “notify” the airport
- B4UFly
- FAA Designed App
- Geo-Referenced Map
- 5 mile circles around airports...
- AND EVERY HELIPAD
- Directs user to “notify” airport/helipad operator
- Notification . . . No power given to operator to veto flights

The Blob...



FAA Insight and Updates

- UAS and Airspace
 - Airspace vs. land-based matters
- Commercial UAS Operations Update
 - Update on Small (commercial) UAS Rule
 - Blanket COAs
 - COA backlog
- Examination of Sponsor Use of UAS on Airfield
- UAS Registration

FAA Insight and Updates

- UAS Education & Outreach
 - Know Before You Fly
 - No Drone Zone Campaign
 - I Fly Safe Campaign
- Control Issues
- Planning, Finance & Compliance Issues
- Summary: FAA – Airport Issues
 - Where we are now and what is coming next

Let's have some fun...

Putting it into action
with some (not so)
hypothetical scenarios



Hypotheticals

One

- Sunny, clear day at KAPT (VFR)
- Airport receives call from the parent of Paul I. Wannabeapilot, his 13 year old son.
- Parent tells airport that Paul will be flying his 5 pound drone
- Will be flying on their 5 acres
- Will be flying for next 2 hours
- 3 Miles from end of KAPT's runway (Runway 27)
- Wind is 270@5
- 30 flights are due to land in next 2 hours
- Runway 27 Visual Approach In Use
- At 3 miles from Runway 27, Paul's yard is 1,000' below where inbound aircraft would be on the ILS 27.

Scenario 1.1

- Low Overcast & Fog
- Visibility $\frac{1}{4}$ mile , ceiling 500'
- ILS/RNAV GPS 27 in use
- 2 miles from runway
- There's a hill that rises 100' above surrounding area

Hypotheticals

Two

- Overcast, Spring Day at KAPT
- Airport gets a call from Regina Relator, a local real estate agent
- Informs airport she will be doing 3 drone flights tomorrow to get photos of her new listings
- B4UFly shows all are within 5 miles of the airport
- Her flights will be 4, 3 and 2 miles from airport reference point

Hypotheticals

Three

- New County Airport sits 4 miles from 2 major, large river-crossing bridges
- New County Airport is owned by New County
- Inspectatron is a fledgling company that owns 5 different drones, ranging from 20 pound, 6-bladed rotorcraft to a 40 pound, fixed wing drone having a wingspan of 20 feet
- New County Bridge Authority, an agency related to New County, needs to do bridge inspections
- Inspectatron is hired by the Authority to do remote inspections of super-structure (above and below roadway)
- Inspectatron has a Blanket COA for its operations

Hypotheticals

Four

- Back to KAPT
- VFR Day
- AA 2016, inbound from CLT
- 3 miles from end of Runway 27, pilot reports to Tower that they just saw a drone and it passed about 50 feet below their right wing.
- The tower manager calls KAPT Operations and informs Ops of the incidence and an approximate location of the incident

Hypotheticals

Five

- Director of KAPT gets a call from WamaZon
- Given the central location of the airport, WamaZon wants to use the airport as a demonstration site for drone-based delivery prescription medications
- The Director had a bad experience with a drone last year – one was hovering over his pool while he was catching some rays on a Saturday afternoon and the video was posted on YouTube.
- He has vowed to never allow drones on his airport, or within 10 miles of his airport
- Where & How Operations Are Proposed To Occur...

Wrap Up/Conclusion Farewell

- Questions?
- Thank you for your participation!
- Conference Wrap-Up

