

## The FAA rolls out its final small UAS rule for commercial operations:

The expected;  
The pleasant surprises;  
The known unknowns;  
. . . and what's next

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## Part 107 – what is it and where does it fit into the UAS regulatory framework?

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- FAA final rule entitled *Operation and Certification of Small Unmanned Aircraft Systems*, 81 Fed.Reg. 42064 (June 28, 2016)
- **Part 107** is the part of the Federal Aviation Regulations (“FARs”) in which the bulk of the final rule is codified
  - Part 101 amended to include the Model Aircraft Special Rule
  - Other parts amended primarily exclude operations under Part 107 from these parts Small
- “Small” means 55 lbs, including payload
- “Certification” of UAS – not quite: only certification is of remote pilots, not the vehicle or platform, and not the commercial operator
- Effective August 29, 2016
- Part 107 is intended to obviate the bulk of section 333 exemptions (about 5,500 have been granted)

## Part 107 – major categories – what was expected

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- Vehicle – no (type, product, or) airworthiness certification
- Pilot – remote pilot certificate with small UAS rating
  - Significant plus: FAA required sec. 333 holders to use Part 61 certificated pilots, which meant manned aircraft flying school training; Part 107 requires passage of aeronautical knowledge test, and NO training (even though FAA recommends it)
- Commercial operator
  - No air carrier provision in Part 107
  - Preamble notes that intrastate package delivery is okay
- Operational limitations
  - Section 333 exemption conditions and limitations reappear as regulatory prohibitions and restrictions, albeit with several significant differences

*Note that operational parameters compensate for absence of airworthiness certification*

## Part 107 expands scope of authorized operations – the pleasant surprises

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- 400 ft AGL limit may be exceeded to conduct inspection or survey of a structure as much as 400 ft above the structure and 400 ft lateral distance.
- Intrastate package delivery (albeit within other operational parameters and no BVLOS operations)
- Operations in controlled airspace (B, C, D, and E) okay if authorized by ATC through web-based portal
- Operations in vicinity of an airport okay if no interference with operations or traffic patterns, subject to ATC authorization if in controlled airspace (see above) – no requirement to notify or obtain consent of airport operator
- Operations over people okay so long as they are not *directly* over a person
- **Waiver authority** upon safety finding (no requirement of public interest)
  - Operation from moving vehicle or aircraft (but no package delivery for comp or hire)
  - BVLOS operations (but no package delivery for comp or hire)
  - Operations at night
  - Operation of multiple UAS by a single remote pilot
  - Operation over people
  - Waiver of operating limitations: speed, minimum visibility, minimum distance from clouds, and 400 feet AGL (even as extended!)
  - Operation not yielding right of way to manned aircraft

## Part 107 – the known unknowns

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### ■ Aeronautical knowledge testing

- Training not required, but recommended; FAA assumes 20 hours of self-study – does the UAS community understand that?
- Will applicant be required to read sectional charts?
- FAA assumption of 10% failure rate – *wildly optimistic?*

### ■ Waiver process – will this be the section 333 process redux?

- Form on FAA website gives deceptive appearance of simplicity
- “Description of operations” box should include safety mitigations (what safety threshold – equivalent level” or “acceptable level”? What conditions will FAA include in waiver?)
- How long will FAA take? 120-day period for sec. 333 exemptions not met once long queue formed

### ■ ATC authorization for operations in controlled airspace– will this be the COA process redux?

- Same on-line form as for waivers
  - FAA asks that requests be made 90 days in advance – *is that practical?*
  - ATC facilities will receive approved authorizations, if granted, per “tentative” schedule:
    - Classes D & E – October 3, 2016
    - Class C – October 31, 2016
    - Class B – December 5, 2016
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## What's left of section 333 after August 29?

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- Current holders of sec. 333 exemption may continue to operate under that exemption until expiration date
- Pending petitions – FAA has notified those applicants whose petition suggests the applicant may operate under Part 107 without needing any additional authority that FAA will take no further action on the petition
- What about pending petitions seeking authority available by Part 107 waiver? FAA is treating these petitions as Part 107 waiver requests – **FAA granted 76 such waivers on August 29**
  - **72 of 76 for operations at night**
  - **Others for Pathfinder companies, for R&D (BVLOS, OOP)**
- FAA short-term extension (sec. 2210) authorizes BVLOS and nighttime operations in section 333 (yes, these operations may be also authorized in a Part 107 waiver)

*FAA's focus is likely to shift away from section 333 and to Part 107 waivers*

## How does FAA short-term extension enacted July 15, 2016 impact Part 107?

- **Sec. 2204 – Assistance to firefighting and utility restoration**
  - FAA shall continue the expeditious authorization of UAS to assist firefighting (per agreement with Depts. of Interior & Agriculture) and utility restoration (per agreement with FEMA)
  - Independent from Part 107; direct final rule amendment?; subsumed in sec. 2207 below?
  - Will this include BVLOS, nighttime and operations over people?
- **Sec. 2207: Emergency authority to aid firefighting, utility restoration, & first responders**
  - By October 13, FAA shall publish guidance and procedures
  - “Exemption or certificate of authorization or waiver”, could be subsumed in Part 107 waiver
  - Allow BVLOS, nighttime operations and suspension of other restrictions
  - No notice and comment
- **Sec. 2209: Designation of critical facilities as off-limits for UAS operations**
  - DOT by Jan. 15, 2017 must set up process by which operators of certain fixed sites may petition FAA to prohibit or restrict UAS operations in close proximity
  - Fixed sites: critical infrastructure: oil & chemical facilities; amusement parks; other sites warranting protection
- **Sec. 2202: Industry consensus standards for remote identification of UAS**
  - Report to Congress by July 15, 2017 on progress
  - By July 15, 2018, FAA to issue regulations or guidance based on any standards developed
  - Will become critical for UTM

## What's on the horizon? – more known unknowns

### ■ Operations over people (OOP) NPRM – expected December 2016

- Outgrowth from misnamed Micro UAS ARC
- Industry to provide performance standards?
- CNN Pathfinder Project experience/data?
- FAA projects final rule end of summer 2017

### ■ UTM Pilot Program – sec. 2208

- 6 months – Jan. 15, 2017: UTM research plan to Congress
- Not later than 90 days thereafter, FAA shall establish pilot program (no particulars specified)
- Pilot program must conclude within 2 years of establishment (around April 2019)
- What is expected from NASA-FAA Research Transition Team (RTT) ?
- Tulsa-PrecisionHawk agreement

### ■ Drone Advisory Committee (DAC)

- First meeting Sept. 16
- To recommend priorities to FAA Administrator

### ■ FAA-Industry Unmanned Aircraft Safety Team (UAST)

- Analyze safety data
- Develop strategies

### ■ Online aeronautical knowledge testing

- Technology is available now to ensure integrity and protect against cheating
- FAA opened the door and should conduct a pilot project now



## What's on the horizon – Congress to engage once again

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- FAA reauthorization – FAA authorities expire Sept. 30, 2017
- Drone and other key provisions left out of short-term extension to use as leverage for moving FAA reauthorization bill in next Congress
- House T&I Committee marked-up bill (H.R. 4441)
  - Air carrier certification process (by amendment)
  - Micro UAS authority – self-executing (by amendment) – *overtaken by events?*
- Senate-passed bill (H.R. 636)
  - UTM implementation, with direction, but no implementation schedule (sec. 2138)
  - Spectrum – placeholder (sec. 2153)
  - Air carrier certification process (sec. 2141)
  - Preemption of state and local laws (sec. 2152)
  - Development of industry consensus standards (sec. 2124)
- Presidential candidates: silent, for now

## Threats to progress

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- Slow pace of FAA rulemaking
  - Serial approach may delay BVLOS and sense & avoid rules
- Is technology mature, reliable? Does FAA has sufficient data?
- UTM implementation, without further congressional direction, may founder
  - Who runs it: FAA or industry?
  - Who pays for it?
  - What's so important about UTM?
- State and local regulation
  - FAA implied preemption has not deterred state and local governments
  - Reluctance of DOT/FAA to take action: Fact Sheet good as far as it goes
  - Development of case law could take many years
  - Senate FAA reauthorization bill preemption provision opposed by state and local lobbying groups

## Questions?

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