FAA UAS SYMPOSIUM

# Pilot-in-Command Certification and Responsibilities

**Lead: Jim Viola**

Manager, FAA Flight Standards Service – General Aviation and Commercial Division

Federal Aviation Administration

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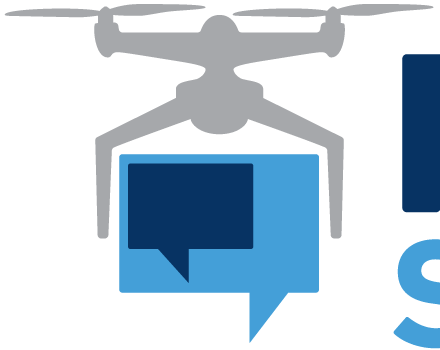
# Workshop 1:
# Pilot-in-Command Certification and Responsibilities

FAA UAS SYMPOSIUM

- **Lead: James Viola**, Manager, General Aviation and Commercial Division, FAA Flight Standards Service
- **Brad Zeigler**, Aviation Safety Analyst, Airman Training and Certification Branch, FAA Flight Standards Service
- **Joe Morra**, Manager, Safety and Operations Branch, FAA UAS Integration Office
- **Captain Steve Jangelis,** Aviation Safety Chairman, Air Line Pilots Association, International



# FAA UAS SYMPOSIUM

## Regulations that Allow Growth & Safe Integration of UAS

**Jim Viola**

Manager, General Aviation and Commercial
Division, FAA Flight Standards Service

Federal Aviation Administration

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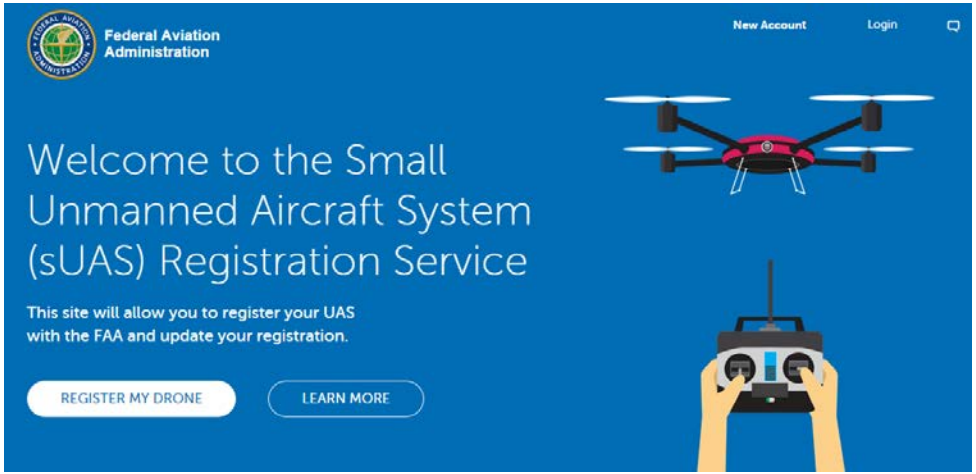
# What is the FAA's Authority?

- U.S. airspace is public space
  - 49 U.S.C. §40103(a)(1)
- UAS are aircraft subject to regulation
  - 49 U.S.C. §40102(a)(6); 14 CFR 1.1; PL 112-95 §331, §336
  - An aircraft is any device used, or intended to be used, for flight
- UAS must comply with FAA regulations

# Online UAS Registration

- Applies to small UAS 0.55-55 lbs. flown outside
- Owner must provide name, address, email
  - Non-recreational owners must provide make, model, and serial number (if available) of each sUAS



# UAS Outreach and Education

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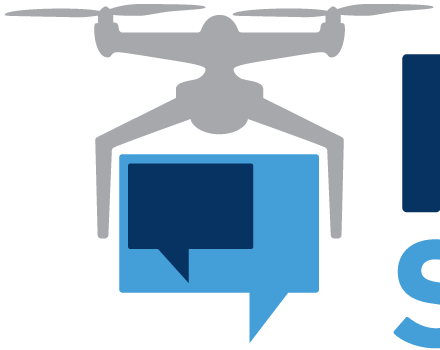

# FAA UAS SYMPOSIUM

## Workshop #1 Remote Pilot in Command Certification and Responsibilities

**Brad C. Zeigler**

Airman Training and Certification Branch,

FAA Flight Standards Service

Federal Aviation Administration

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# RPIC Certification and Responsibilities

- Getting your Certificate
  - Starting from Scratch
  - Already a certificated Pilot?
- RPIC Responsibilities
  - Register your Aircraft
  - Preflight Aircraft and Crew
  - Assess the Operating Environment
  - Designate RPIC, Be RPIC
  - Adhere to Operational Rules
  - Fly Safe

# Becoming a Remote Pilot under Part 107

## Eligibility

- Must be 16 years old or older
- Must read, speak, write, and understand English
- No physical or mental condition that would interfere with the safe small UAS operations
- Must pass an aeronautical knowledge exam at an FAA-approved Knowledge Testing Center
  - Current Part 61 certificate holders can take training at faasafety.gov instead of the knowledge test
- Must undergo TSA Background security screening


**Total Remote Pilot Certificates Issued:** 37,579
**Total Knowledge Exams Passed:** 23,425
**Success Rate:** 91%

# Becoming a Remote Pilot under Part 107

## Starting from Scratch

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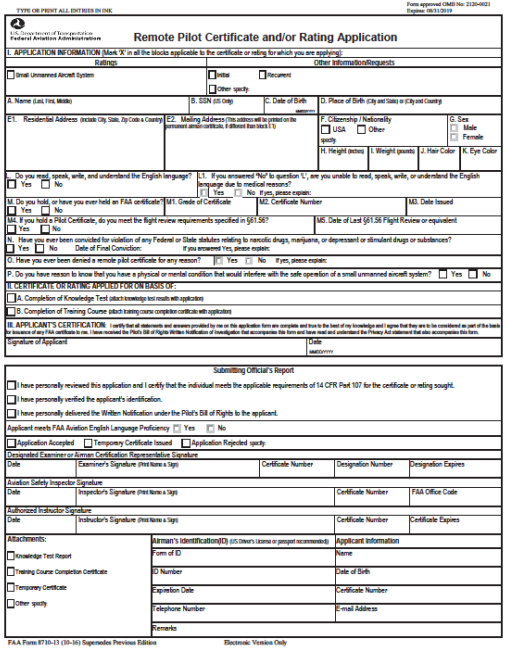
1. Go to http://www.faa.gov/uas
2. Prepare for knowledge test
   - 60 Questions, 70% required to pass
   - Covers broad range of topics
   - FAA Test prep a good resource
3. Pass the knowledge test
4. Apply for the certificate (https://iacra.faa.gov)
5. Download temporary certificate
6. Fly! Your permanent certificate will be mailed to you in a few weeks.



TYPE OR PRINT ALL ENTRIES IN INK

Form approved OMB No. 2120-0021
Expires: 08/31/2019

U.S. Department of Transportation
Federal Aviation Administration

**Remote Pilot Certificate and/or Rating Application**

I. APPLICATION INFORMATION (Mark 'X' in all the blocks applicable to the certificate or rating for which you are applying):

Ratings | Other Information/Requests

☐ Small Unmanned Aircraft System | ☐ Initial ☐ Recurrent ☐ Other: specify.

A. Name (Last, First, Middle) | B. SSN (US Only) | C. Date of Birth (MM/DD/YYYY) | D. Place of Birth (City and State) or (City and Country)

E1. Residential Address (include City, State, Zip Code & Country) | E2. Mailing Address (This address will be printed on the permanent remote certificate, if different than block E1.)

F. Citizenship / Nationality: ☐ USA ☐ Other specify | G. Sex: ☐ Male ☐ Female

H. Height (inches) | I. Weight (pounds) | J. Hair Color | K. Eye Color

L. Do you read, speak, write, and understand the English language? ☐ Yes ☐ No

L1. If you answered "No" to question 'L', are you unable to read, speak, write, or understand the English language due to medical reasons? ☐ Yes ☐ No If yes, please explain:

M. Do you hold, or have you ever held an FAA certificate? | M1. Grade of Certificate | M2. Certificate Number | M3. Date Issued

M4. If you hold a Pilot Certificate, do you meet the flight review requirements specified in §61.56? ☐ Yes ☐ No | M5. Date of Last §61.56 Flight Review or equivalent

N. Have you ever been convicted for violation of any Federal or State statutes relating to narcotic drugs, marijuana, or depressant or stimulant drugs or substances? ☐ Yes ☐ No Date of Final Conviction: If you answered Yes, please explain:

O. Have you ever been denied a remote pilot certificate for any reason? ☐ Yes ☐ No If yes, please explain:

P. Do you have reason to know that you have a physical or mental condition that would interfere with the safe operation of a small unmanned aircraft system? ☐ Yes ☐ No

II. CERTIFICATE OR RATING APPLIED FOR ON BASIS OF:

☐ A. Completion of Knowledge Test (attach knowledge test results with application)

☐ B. Completion of Training Course (attach training course completion certificate with application)

III. APPLICANT'S CERTIFICATION: I certify that all statements and answers provided by me on this application form are complete and true to the best of my knowledge and I agree that they are to be considered as part of the basis for issuance of any FAA certificate to me. I have received the Pilot's Bill of Rights Written Notification of Investigation that accompanies this form and have read and understand the Privacy Act statement that also accompanies this form.

Signature of Applicant | Date (MM/DD/YYYY)

**Submitting Official's Report**

☐ I have personally reviewed this application and I certify that the individual meets the applicable requirements of 14 CFR Part 107 for the certificate or rating sought.

☐ I have personally verified the applicant's identification.

☐ I have personally delivered the Written Notification under the Pilot's Bill of Rights to the applicant.

Applicant meets FAA Aviation English Language Proficiency ☐ Yes ☐ No

☐ Application Accepted ☐ Temporary Certificate Issued ☐ Application Rejected specify

Designated Examiner or Airman Certification Representative Signature

| Date | Examiner's Signature (Print Name & Sign) | Certificate Number | Designation Number | Designation Expires |
|---|---|---|---|---|

Aviation Safety Inspector Signature

| Date | Inspector's Signature (Print Name & Sign) | Certificate Number | FAA Office Code |
|---|---|---|---|

Authorized Instructor Signature

| Date | Instructor's Signature (Print Name & Sign) | Certificate Number | Certificate Expires |
|---|---|---|---|

Attachments:
☐ Knowledge Test Report
☐ Training Course Completion Certificate
☐ Temporary Certificate
☐ Other specify

Airman's Identification(ID) (US Driver's License or passport recommended) | Applicant Information

Form of ID | Name

ID Number | Date of Birth

Expiration Date | Certificate Number

Telephone Number | E-mail Address

Remarks

FAA Form 8710-13 (10-16) Supersedes Previous Edition | Electronic Version Only

# Becoming a Pilot under Part 107

## Already a Certificated Pilot?

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1. Go to http://www.faa.gov/uas
2. Are you flight review current (§61.56)?
3. Take the online training course
4. Apply for the certificate (https://iacra.faa.gov)
5. Upload training course completion certificate in IACRA
6. Submit required documents to approving official (FSDO, DPE, ACR, or CFI)
7. Receive temporary certificate
8. Fly!

## What you need to know…

| Knowledge Area Topics (from §107.73 and 107.74) | New Remote Pilots | | Current Part 61 Pilots | |
|---|---|---|---|---|
| | Initial | Recurrent | Initial | Recurrent |
| Applicable regulations relating to small UAS | X | X | X | X |
| Airspace classification, operating requirements, and flight restrictions | X | X | | |
| Aviation weather sources / effects of weather on small unmanned aircraft performance | X/X | | -/X | |
| Small unmanned aircraft loading | X | | X | |
| Emergency procedures | X | X | X | X |
| Crew resource management | X | X | X | X |
| Radio communication procedures | X | | | |
| Determining the performance of small unmanned aircraft | X | | X | |
| Physiological effects of drugs and alcohol | X | | | |
| Aeronautical decision-making and judgment | X | X | | |
| Airport operations | X | X | | |
| Maintenance and preflight inspection procedures | X | X | X | X |

# Your Responsibility as RPIC


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# Your Responsibility as RPIC


If your unmanned aircraft is greater than .55lbs, it must be registered

https://registermyuas.faa.gov/

References:

- §107.13 Registration
- §91.203 Civil aircraft: Certifications required
- Part 48 Registration and marking requirements for small unmanned aircraft

# Your Responsibility as RPIC


**§107.15 Condition for safe operation**

- The Aircraft must be in a condition for safe operation
- The RPIC must check the condition of the UAS prior to the flight
- You must land if there is any indication that the UAS is no longer in a condition for safe operation

**§107.49(c-e) Preflight Inspection and actions**

Ensure that:

- all control links are working properly
- there is enough available power
- anything attached or carried is secure and does not adversely affect the flight characteristics or controllability

# Your Responsibility as RPIC


**§107.17 Medical Condition**
You may not act as RPIC if there is any indication that you have a physical or mental condition that would interfere with the safe operation of a UAS

**§107.27 Alcohol and Drugs**
- No Flying within 8 hours of drinking
- No under the influence
- No BAC .04 or greater
- No using drugs that affects safety

**"IMSAFE"**

**I**LLNESS
**M**edication
**S**tress
**A**lcohol
**F**atigue
**E**ating

# Your Responsibility as RPIC


**§107.49(a-b) Preflight familiarization**

Assess the operating environment:

- Local weather conditions
- Airspace and flight restrictions
- Location of people and property
- Any ground hazards

Brief your crew regarding:

- Operating conditions
- Emergency procedures
- Contingency procedures
- Roles and responsibilities
- Potential hazards

**Think "Risk Mitigation"**

# Your Responsibility as RPIC


**§ 107.19 Remote pilot in command**

An RPIC must:

- be designated for each flight
- Accept responsibility for and is the final authority as to the operation of the UAS
- Ensure the aircraft will not harm people, property or other aircraft in the event of a loss of control
- Adhere to all applicable regs
- Be able to direct the small unmanned aircraft to ensure compliance with regs

**§107.21 In-flight emergency**

RPIC may deviate from any rule to the extent necessary to address an in-flight emergency requiring immediate action

# Your Responsibility as RPIC


- **No operation from a moving vehicle or aircraft (§107.25)**
  - Except from moving vehicle in sparsely populated area and not transporting property for compensation or hire
- **No operation at night (§107.29)**
  - Civil twilight permitted if small UAS is equipped with appropriate lighting
- **Aircraft must remain within visual line of sight (§107.31)**
  - May use vision correction but no other aids
  - Must be able to see the aircraft throughout the entire flight
  - Cannot use Visual Observer to daisy chain
- **No operation of multiple aircraft (§107.35)**
  - One RPIC for each aircraft
- **No Hazmat (§107.36)**
- **Must yield right of way to all other aircraft (§107.37)**
  - Must not fly so close to another aircraft so as to create a collision hazard

# Your Responsibility as RPIC


- **No Operations over people (§107.39)**
  - May fly over people if they are under a covered structure, provided the structure is not in a moving vehicle
- **Must have authorization to fly in controlled airspace (§107.41)**
- **Must have permission to fly in prohibited or restricted areas (§107.45)**
- **No interference with operations and traffic patterns at airports (§107.43)**
- **Must adhere to operating limitations for small UAS (§107.51)**
  - Groundspeed no faster than 87 knots (100 mph)
  - Maximum altitude of 400 feet above ground level or 400 feet within the shadow of a structure
  - Flight visibility of at least 3 miles
  - Aircraft must remain  500 feet below, and 2000 feet horizontally from a cloud

# Your Responsibility as RPIC

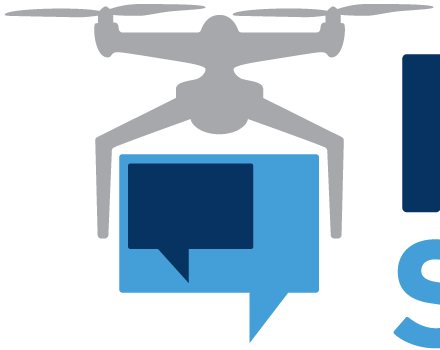

**§107.23 Hazardous operation**

An RPIC may not:

- Drop an object that causes undue hazard to people or property
- Operate in a careless or reckless manner so as to endanger the life or property of another

The "Catch-all" regulation

# Your Responsibility as RPIC



# FAA UAS SYMPOSIUM

**Joe Morra**

Manager, Safety and Operations Branch,
FAA UAS Integration Office

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# Current UAS Options

FAA UAS SYMPOSIUM

| | Aircraft Requirements* | Pilot Requirements | Airspace Requirements | Types of Operation |
|---|---|---|---|---|
| **Part 107** | UAS < 55 lbs. | Part 107 remote pilot certificate with small UAS rating | Airspace waiver or authorization for Class B, C, D, E airspace | VLOS, daytime, Class G, 400 ft., not over people OR waiver provisions |
| **Section 333** | As specified in exemption | Part 61 airman certificate | Blanket COA or Standard COA for specific airspace | UAS > 55 lbs. |
| **Experimental Aircraft** | Experimental Special Airworthiness Certificate | Part 61 airman certificate | Standard COA for specific airspace | Research and development, crew training, and market survey |
| **Type Certificated Aircraft** | Restricted type or special class certification | Part 61 airman certificate | Part 91 airspace requirements | Specified in operating authorization |
| **Public Aircraft** | Self-certification by public agency | Self-certification by public agency | Blanket COA or Standard COA for specific airspace | Public Aircraft Operations (AC 00-1.1A); UAS Test Site operations |
| **Part 101 Model Aircraft** | UAS < 55 lbs. | Community-based organization (CBO) standards | Notification requirement within 5 miles of an airport | Hobby or recreational, VLOS, Part 101 operating rules, CBO standards |

*Note: All UAS greater than 0.55 pounds must be registered (see part 47 and part 48 requirements)

# Pilot-In-Command Roles and Responsibilities

Captain Steve Jangelis
*Aviation Safety Chairman*

March 29, 2017

# A Pilot's Roles and Responsibilities

- It all about **Safety!**
- Well Educated, Well-Trained Pilot is the Best Safety Tool in the NAS
- It Starts with Education:
  - Knowing and Understanding the Regulations: Part 107 and 91
  - Knowing and Understanding the Airspace
  - Knowing and Understanding The Operating Environment
  - Knowing and Understanding Weather
  - Knowing and Understanding Aircraft / UAS performance

# A Pilot's Roles and Responsibilities

- Training
  - Types of Training
  - Comparing and Contrasting Manned vs Unmanned Training
    - Knowledge Testing
    - Practical Testing
    - Recurrent Testing

# A Pilot's Roles and Responsibilities

- Certification
  - Being "The Pilot In Command"
  - Responsible
    - Good Health
    - Knowledgeable
    - In Control
    - Making good decisions
    - Just like a manned-aircraft PIC, the remote PIC of a sUAS is directly responsible for, and is the final authority as to, the operation of that UAS

# A Pilot's Roles and Responsibilities

- Flying Safely Together
- Safe Integration
- Remember – A Well Educated, Well-Trained Pilot is the Best Safety Tool in the NAS

Captain Steve Jangelis
Aviation Safety Chair
Steve.Jangelis@alpa.org

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- **Captain Steve Jangelis,** Aviation Safety Chairman, Air Line Pilots Association, International

# **James Viola,** Manager, General Aviation and Commercial Division, FAA Flight Standards Service

James A. Viola is the Federal Aviation Administration's (FAA) Manager of the General Aviation and Commercial Division, where he is responsible for regulations and policy recommendations governing training, certification, inspection, and surveillance of general aviation (GA) airmen, flight instructors, GA air agencies (pilot schools), commercial operations, and public aircraft operations. Previously, Mr. Viola was the Army Aviation Division Chief for the Headquarters Department of the Army's Current Army Aviation Operations.

Mr. Viola holds a master's degree in strategic studies from the United States (U.S.) Army War College in Carlisle, PA; a master's degree in international relations from Auburn University in Montgomery, AL; a master's degree in military operational art and science from Air University in Maxwell AFB, AL; and a Bachelor of Science from East Stroudsburg University in East Stroudsburg, PA.

# **Brad Zeigler,** Aviation Safety Analyst, Airman Training and Certification Branch, FAA Flight Standards Service

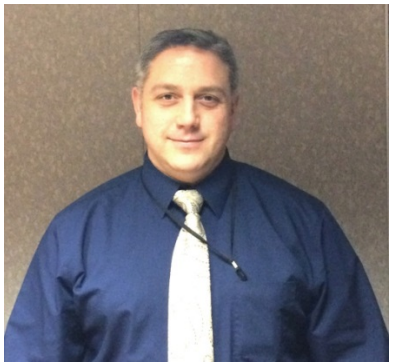
FAA UAS SYMPOSIUM

Brad Zeigler has logged more than 12 years in the aviation safety industry. He is currently an analyst in the Federal Aviation Administration's (FAA) Flight Standards General Aviation and Commercial Division, focusing on issues related to airman certification and unmanned aircraft regulations. His most recent work includes policy and implementation of the Part 107 Small Unmanned Aircraft Rule, and implementation of the *Alternative Pilot Physical Exam and Education Requirements*, commonly known as BasicMed.

Prior to joining Flight Standards, Mr. Zeigler evaluated safety-related airport projects under the Airport Improvement Program, enforced airport grant assurances under the Airport Compliance Program, and provided technical expertise to the FAA Wide Area Augmentation System (WAAS) program.

Mr. Zeigler holds Airline Transport Pilot, Remote Pilot and Flight Instructor Certificates. He is an active general aviation pilot in the Washington DC area. He received a bachelor's degree in political science from Randolph-Macon College and a Master of Business Administration from Virginia Commonwealth University.

# **Joseph Morra,**
# Manager, Safety and Operations Branch, FAA UAS Integration Office



Joe Morra is a Branch Manager with the Federal Aviation Administration's (FAA) Unmanned Aircraft Systems (UAS) Integration Office; AUS-430 (Safety & Operations) located at FAA Headquarters offices in Washington, DC. This branch is an enterprise-wide conduit for UAS initiatives serving as a liaison for safety, operational and security initiatives between responsible organizations both within the FAA and external stakeholders.

Before joining the UAS Integration Office, Mr. Morra was a General Aviation Operations Inspector for the Flight Standards District Office (FSDO) in Teterboro, New Jersey and more recently, served as a Subject Matter Expert in the Flight Standards Headquarters General Aviation and Commercial Division. Prior to working for the FAA, Mr. Morra owned and managed flight training and other small businesses for over 10 years.

Mr. Morra is a flight instructor and maintains his airline transport pilot (ATP) Certificate.

# **Captain Steve Jangelis,**
# Aviation Safety Chairman,
# Air Line Pilots Association, International

Captain Steve Jangelis is the Aviation Safety Chairman for the Air Line Pilots Association, International Air Safety Organization. Mr. Jangelis also serves the Delta Air Lines Master Executive Council Air Safety Committee as an Accident Investigator and instructs new ALPA pilot volunteers in that discipline. Based in New York City, Mr. Jangelis flies the Boeing 717. He is type rated on the Douglas DC-9, Boeing 727 and Boeing 757/767.

Mr. Jangelis currently is the Co-Chairman of the FAA's Runway Safety Council and is a member of the FAA Research, Engineering, and Development Advisory Committee (REDAC) Subcommittee for Airports. He is also a member of the FAAs Airport Construction Advisory Council and serves on the Steering Committee for Bird Strike Committee USA. Mr. Jangelis has also participated in Airports, Voice Recorder and Structures Groups in official NTSB investigations.

Prior to becoming an Air Line Pilot, Mr. Jangelis gained airport operations experience as an Airfield Operations and Maintenance technician at a Midwest airport and has been a guest speaker and panelist at many Airport Accreditation Schools training seminars.

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