FAA UAS SYMPOSIUM

Public Agencies: What You Need to Know to Start Your Drone Program

Federal Aviation Administration

AUVSI™

Public Agencies: What You Need to Know to Start Your Drone Program
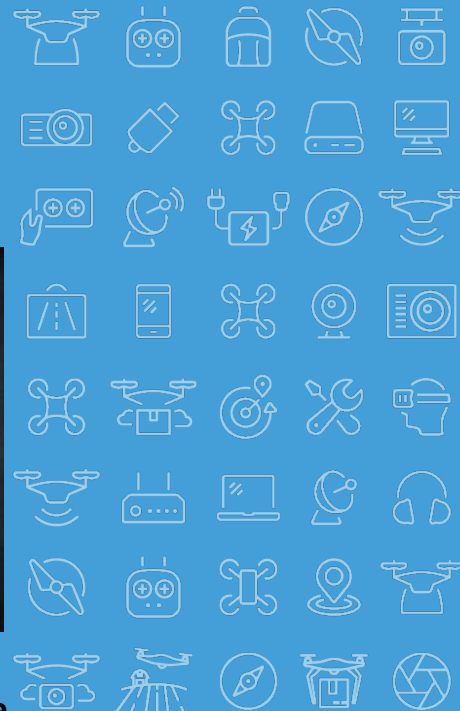

Mike O'Shea, FAA UAS Integration Office

Christopher W. Sadler, York County Department of Fire and Life Safety

Darshan Divakaran, NC Department of Transportation

Brook Rollins, Arlington (TX) Police Department

#UAS2019

FAA UAS SYMPOSIUM

York County Fire & Life Safety
&
York – Poquoson Sheriff's Office

R.O.V.E.R. Team

(**R**emotely **O**perated **V**ehicles for **E**mergency **R**esponse)

Team Make-Up

❑ Program began with two personnel in April of 2016

❑ Now a team of 20 personnel from Fire /Rescue and Sheriff's Office

❑ Blanket FAA Certificate of Authorization (COA) for Class G Airspace (June 2016)

❑ Jurisdictional COA for all of Virginia Peninsula (to include airspace around LAFB, Norfolk Navy Base, Ft. Eustis, Norfolk International, and Newport News/Williamsburg Int'l airports)

❑ All members are FAA Part 107 Certified Remote Pilots and have many hours of training in UAS operations and management.

❑ Team trains a minimum of 2x a month (1 is at night). Additional exercises/demonstrations on average of 2-3 a month.

❑ Team has over 200 missions and formal demonstrations since June, 2016.

❑ Team members have taught and/or presented for national programs such as FDIC, AUVSI Xponential, DJI Conference, FBI UAS Conference, FAA UAS Conference

❑ Participate with National Institute for Testing and Materials (NIST) UAS research programs

York County Aircraft

Phantom 4 Pro

Mavic 2 Zoom

Inspire 1 V2

Matrice 210

Mavic Pro with Cages

Tello with Cage

Matrice 600 Pro

Early Adopter Problems

❑ No one to copy
- ❑ Very few SOP's (Austin FD, Miami-Dade PD)
- ❑ Very few COA's
- ❑ Info on best aircraft for our needs
- ❑ Best Practices

❑ Equipment Problems
- ❑ IT Issues (tx and recording of video)
- ❑ Adequate battery charging solutions
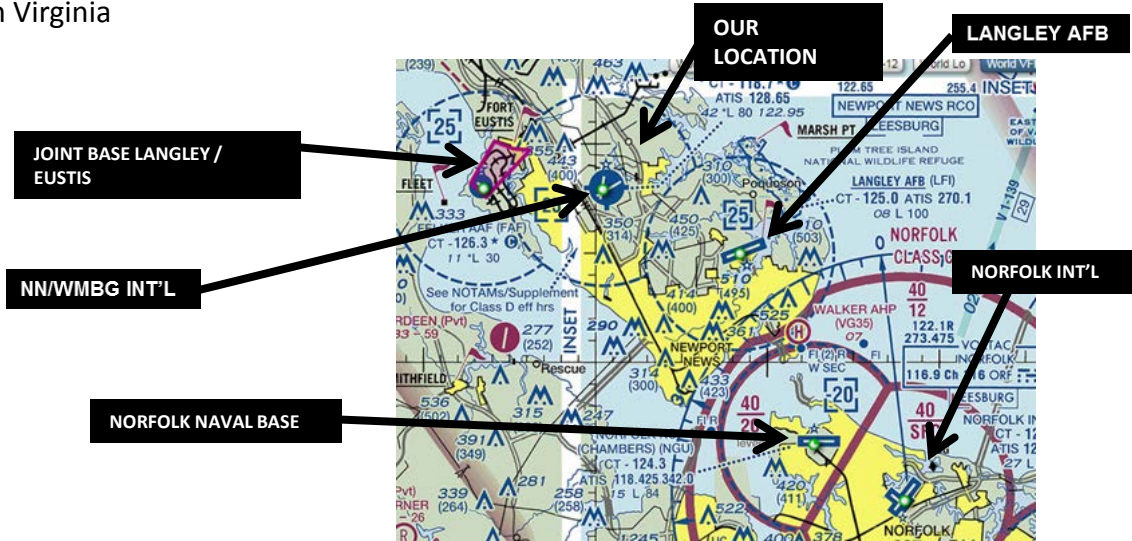- ❑ No commercially available solutions to many issues (not invented yet)

Air Space Coordination

- ❑ Airspace restrictions (very complicated airspace)
- ❑ FAA Emergency Waiver delays for emergency needs (early on)
    - ❑ 2016 >1.5 hours
    - ❑ October 2018 <3 minutes
- ❑ Great Relationships with All ATC's Management and Staff
- ❑ Local ATC even calls outlying ATC's to vouch for us when deployed elsewhere in Virginia

OUR LOCATION

LANGLEY AFB

JOINT BASE LANGLEY / EUSTIS

NN/WMBG INT'L

NORFOLK INT'L

NORFOLK NAVAL BASE

R.O.V.E.R.
Remotely Operated Vehicles for Emergency Response

How Have We Overcome the Hurdles, Bumps and Bruises?

- ❑ Support from leadership and community
  - ❑ Be open with program
  - ❑ Engage in community events/opportunities
- ❑ Great team members
- ❑ Early partnership with FAA and the area ATC's
- ❑ Staying connected and engaged beyond our team
- ❑ Participation in standards development, R&D, Beta testing
- ❑ Think outside of the box
- ❑ Share lessons learned with others

Questions?

Deputy Chief Chris Sadler
SadlerC@yorkcounty.gov
(757) 890-3619

R.O.V.E.R.
Remotely Operated Vehicles for Emergency Response

Brook Rollins - Lieutenant
Arlington Police Department

GETTING YOUR UNMANNED AIRCRAFT PROGRAM OFF THE GROUND

Presentation Outline

- The Role of The Chief

- Equipment Selection

- Relationship Management

- Privacy Concerns & Management

- Policies, Laws, & Reporting

- Deployment

Arlington PD Aviation Unit

Program Timeline

- 2009 – Concept of sUAS introduced
- 2011 – First T&E COA issued
- 2013 – Jurisdictional COA issued
- 2014 – New Equipment - RDASS
- 2015 – FAA Rule Change
- 2017 – New Equipment – Mavic Pro
- 2018 – Part 107
- 2019 – New Equipment – Mavic 2 & COA Revise

Operational Area

The Role of The Chief

- Vision & Philosophy
- Defining Operational Expectations
- Organizational Placement
- Relationship Management

Equipment Selection

- DJI Mavic Pro
- Paradigm shift in deployment
- Solo operator deployment authorized
- 4.3 mile max distance, 27 minutes flight time
- Carried in patrol cars
- 27 MPH wind
- Limited night use
- Ease of use

Equipment Selection

- DJI Mavic 2 Enterprise Zoom & Dual
- Same deployment philosophy and flight characteristics
- Huge increase in effectiveness
- De-escalation tool
- Spotlight, Speaker, Beacon

Relationship Management

- Community
    - Town Hall Meetings
    - Elected Officials
    - Citizens Police Academy Alumni
    - Rotary Club
- Advancing Program
    - NCTCOG Working Group
    - NIJ National UAS Focus Group
    - Outreach

- FAA
    - Monthly reporting
    - Crash reporting
- State of Texas
    - Bi-annual reporting required
- Internal
    - Diverse customers with diverse missions

Privacy Concerns & Management

- White House policy
- 4th Amendment
    - Exceptions
    - Case law
- Texas law (GC423)
- COA policy
    - BWC
    - DVR
    - Digital media storage
- Open Records

Policies, Laws, & Reporting – The COA

Jurisdictional and Blanket

- Jurisdictional most often used
- Blanket useful for mutual aid requests (SGI COA)
- Available to Public Safety Agencies
- Specific requirements
- "The Public COA"

Airspace Prohibition

Policies, Laws, & Reporting – Part 107

- The FAA codified commercial access to the NAS through Part 107
- Low Altitude Authorization and Notification Capability (LAANC)
- FEMA Type Rating
- $150 test fee
- "The Private COA"

Deployment

- Mission types/examples
  - Search/rescue (lost/missing, suicidal, fleeing suspects)
  - Support Units: SWAT, Crime Scene, Accident Reconstruction
  - Major Incidents: Mass Gathering, Security Threats (e.g. stadium events, July 4 Parade)

Department Contact

UAS Program Manager

Brook Rollins

Lieutenant

Arlington Police Department

brook.rollins@arlingtontx.gov

Thank you!

State & Local Agencies using UAS

The most common state agencies to use UAS are:

- Departments of transportation
- Emergency management
- Public safety
- Department of Agriculture
- Department of Labor
- State colleges and universities

Standards for Training & Certification

- Organizations like ASTM, AUVSI, ANSI will work to coordinate and accelerate the development of the standards and conformity assessment programs needed to facilitate the safe, mass integration of UAS into the national airspace system (NAS) of the United States

- Standards currently published or under revision/development including: operations over people; extended and beyond visual line of sight operations; operational risk assessments, etc.

Training Plan

Initial Training

- Part 107
- Flight Training
- Flight Safety
- State Regulations
- Agency Policy and Procedure
- Mission Specific Training

Training

- Aircraft System Knowledge
- Airspace
- Emergency Procedures
- Weather
- Federal & State Regulations
- Flight Proficiency

Recurrent

Platform Selection

- **High quality** images and video mission specific.
- Swappable **plug and play** technology
- GPS-based navigation and flight management system for **precise flight planning**.
- Capacity for **autonomous** or **semi-autonomous** flights
- Sufficient **battery life** needed for the missions
- Ability to operate in **weather conditions**
- **Safety features** such as a low battery warning system, auto return, etc.

Documentations

- Pilot **certification** and UAS **purchase/rental** documents.
- **Maintenance** records and **airworthiness** certification on the UAS
- Pilot **training** records including both initial and recurring training documentation.
- UAS flight data and **metadata**.
- **Mission** specific documents:
  - Pre, during & post Mission planning documents.
  - Incident Report
  - Data storage procedures

Multi agency sharing

- Help save money.
- Increase usage will increase proficiency.
- Single policy to govern use, documentation, and evidence/video retention.
- Agencies can operate under the same Certificate of Authorization (COA), rather then individual COA.
- Can ensure safety if UAS maintenance is conducted by a single agency.
- Increase availability of both equipment and personnel during operations and emergency.

A to Z Steps to create a UAS program

- Assure the Governing agency has passed a law regulating UAS use.

- Determine the best uses which your agency intends to make of UAS.

- Develop the procedures, policies and safety standards that will govern the use of the UAS by your agency

- Present the summary of intended uses along with the proposed procedures, policies and safety standards to the governing body for approval.

- Organize a public outreach to present the proposed procedures, policies and safety standards for intended use.

- Get 1 or 2 individuals in the agency to start working on their FAA Part 107.

- Select a UAS that has the necessary capabilities to accomplish the mission approved by the governing body.

A to Z Steps to create a UAS program

- Decide if purchasing or leasing is the best option.

- Secure funding options

- Facilitate training through the vendor or get a third party to train your team.

- Prepare checklist, statement of procedures (SOP) and agency standards for the flight team.

- Obtain FAA Part 107 and NC UAS Permit

- Register the UAS with FAA

- The agency should get an insurance in place for the UAS

- Decide if post processing software is required for the UAS data.

- Have a data management, data transfer and data security plan in place for the agency.

UAS Program Office Role

Regulatory - Permitting commercial & government N.C. UAS operators

Education - outreach, workshops, training, NC Drone Summit

Research – Testing new technology

Flight Services - NCDOT, other state agencies, local governments

Government Agency Integration - UAS program development, NC UAS IPP, etc.

DIVISION OF AVIATION
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

UAS Operator Permit

Federal

- Pass a UAS knowledge test at FAA testing center
- TSA background check
- Apply for Remote Pilot Certificate

North Carolina

- Pass NC UAS Knowledge test online
- Free permit
- Apply for commercial or government NC Operator Permit online

https://www.ncdot.gov/divisions/aviation/uas/

NCDOT 2020 UAS Integration

- UAS Working Group
- Department UAS Policy
- Training and Certification
- Platform Selection
- Recurrent Flight Training
- Additional Waivers & Authorizations
- Fleet Management
- Coordinated Emergency Response
- Maintenance and Repair
- Contracted Services

Role of Division of Aviation: Facilitate the safe integration of drones within the Department

Steps for a UAS Program

- UAS law passed by governing agency
- Determine the use.
- Procedures, policies and safety standards
- Public outreach
- UAS selection
- Crew selection & training
- Insurance
- Checklist, SOP and agency standards
- Data Management, Transfer & Security

Darshan Divakaran, UAS Program Engineer

Phone - (919) 814-0584

Email - ddivakaran@ncdot.gov

For more information visit
https://www.ncdot.gov/divisions/aviation/uas/
UAS Program Office
Email – UAS@ncdot.gov
Phone – 919-814-0550

Lunch Plenary starts at 12:30 PM...

Delivery by Drone – On the Route to Routine

Boxed lunch available – Level 400 Ballroom

#UAS2019

FAA UAS SYMPOSIUM