Statewide Unmanned Aircraft Systems (UAS) Standardization and Response

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Agenda

• Introduction
• Purpose
• Learning Objectives
• Background
• State UAS Program Survey Results
• State Public Safety UAS Pilot Certification/ Qualification Program Framework
• 2019 Timeline
• Questions/ Discussion
• References
• Contacts
Introductions

Travis Calendine

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Purpose

• Collaborative discussion on Statewide UAS standards, training, and certification for public safety UAS pilots.
Learning Objectives

• Overview of public safety UAS programs around the State.
• Why the need for a standardized training and certification.
• Share and discuss the initial framework of the training and certification program.
Background

• North Texas Public Safety Unmanned Response Team and the City of Austin Fire Department Robotic Emergency Deployment (RED) Team
  • Proof of concept
• Hurricane Harvey
• Rebuild Texas Hurricane Harvey Report
• Partners:
  • North Texas and Capital Region Public Safety Unmanned Response Teams
  • North Central Council of Governments UAS Working Group
  • Texas A&M Engineering Extension Services (TEEX)
  • Other local jurisdictions
Eye of the Storm UAS Recommendations

• Review laws and practices affecting the use of drones during emergency events and recommend changes in operations to promote their use. (Pg.7. Chapter 7, Item # 9)

• Technology used during and after Hurricane Harvey included unmanned aerial vehicles, commonly referred to as UAVs, unmanned aircraft systems (UASs), or drones; websites; social media; and software applications. The use of technology can accelerate and expand response and recovery efforts. (Pg. 139. Disaster Technology)

• Drones played an important role in the immediate aftermath to Hurricane Harvey. Many different groups, both public and private, flew drones over affected areas for a variety of reasons. Emergency responders as well as insurance companies, NASA, railway operators, private industry, and state government agencies were all among drone users during Harvey. (pg. 139, Drones)
2017
State
Air Operations Center
The Next Frontier
State UAS Program Survey Results

• Questions: (57) Responses
  • Point of Contact
  • Jurisdiction
  • Public Safety Entity
  • Certificate of Authorization (COA)
  • Part 107
  • Program Existence
  • Program Scale
  • Program Management
  • Program Funding
  • Type and Quantity of UAS
  • Issues/ Concerns
  • Comments
Survey Results

Public Safety Entity

57 responses

- Fire Department: 24 (42.1%)
- Police Department: 22 (38.6%)
- Emergency Management: 15 (26.3%)
- FD, PD, and EM: 1 (1.8%)
- Regional 9-1-1: 1 (1.8%)
- Higher Education: 1 (1.8%)
- GIS: 1 (1.8%)
- Public Safety Technology Services: 1 (1.8%)
Survey Results cont.

- COA: 57 responses
  - Yes: 47.4%
  - No: 52.6%

- Part 107: 57 responses
  - Yes: 31.6%
  - No: 68.4%

- How long has your UAS program existed?
  - 57 responses
  - 0-1 Years: 47.4%
  - 1-3 Years: 30.9%
  - 3-5 Years: 16.9%
  - 5+ Years: 4.7%

- The scale of the program? How many UAS Pilots:
  - 57 responses
  - 1: 18.1%
  - 2: 16.8%
  - 3: 16.8%
  - 4: 13.3%
  - 5+: 15.3%
Survey Results cont.

UAS Program Manager

57 responses

[Pie chart showing distribution of responses: 77.2% Full Time, 19.3% Part Time, 3.5% Collateral Duty]

UAS Program Funding Sources

57 responses

- Jurisdiction/Department Budget: 43 (75.4%)
- Grant: 16 (28.1%)
- Non-Profit: 9 (15.8%)
- Donation: 2 (3.5%)
- Officers personal drone: 1 (1.8%)
- Other Department: 1 (1.8%)
- Private Funding: 1 (1.8%)
- Private citizen donation: 1 (1.8%)
- Seizure Funds: 1 (1.8%)
- LCRA internal projects: 1 (1.8%)
- Educational reimbursement: 1 (1.8%)
- Personal: 1 (1.8%)
- None: 1 (1.8%)
Survey Results cont.

• **Type and Number of UAS in your program.**
  • Types: DJI, Lepton RDASS
  • Number: 3 to 5 average

• **Common Issues/ Concerns:**
  • Standardized Training
  • Program Management
  • Certifications

• **Comments:**
  • I would like to see training available for more emergency services pertaining to intergovernmental communication and planning. Stuff like that is hard to come by unless you dig for it or specifically reach out to someone, so a central platform for state and local agencies to turn to would be helpful in planning flights and addressing important areas.
HOW STANDARDS PROLIFERATE:
(SEE: A/C CHARGERS, CHARACTER ENCODINGS, INSTANT MESSAGING, ETC)

SITUATION:
THERE ARE 14 COMPETING STANDARDS.

14?! RIDICULOUS!
WE NEED TO DEVELOP ONE UNIVERSAL STANDARD THAT COVERS EVERYONE'S USE CASES.

YEAH!

[SOON:]

SITUATION:
THERE ARE 15 COMPETING STANDARDS.
State Public Safety UAS Pilot Certification/Qualification Program Framework

- Basic
- Advanced
- Master
- LZ Manager Course
- UAS Manager Course
- Jurisdictional UAS Program Coordinator Course
- State UAS Disaster Coordinator
BASIC

• 40 Hour Flight School
• Basic level NIST Course certification
• Part 107 License (Federal Standard)
• Check Off and qualify on basic level mission flight skills
  • What do we want these to be?
ADVANCED

• 2 Years as Basic Pilot
• 50 Documented Flight Hours
• Part 107 Renewed
• NIST – Recertified at a higher skill level
• Checkoff and qualify on Advanced level mission flight skills
• Upon completion of Advanced may take LZ Manager Course and get Certified as LZ Manager?
• Other Skills that should be required?
• 2 years as Advanced Pilot
• 100 Documented Flight Hours
• Part 107 Renewed
• Re-Certification on NIST – must meet a higher standard of proficiency
• Checkoff and qualify on Master level mission flight skills
• Upon completion will be eligible for UAS Manager Course
• Other skills that should be required?
What do I get with each Certification Level?

• A Card with your Certification Level on it and any other endorsements such as LZ Manager or UAS Manager.

• This card would be presented to Command at any incident you respond to and they would quickly be able to identify what UAS positions you are eligible to fill.

• This card will also allow an LZ Manager to quickly identify your skill level and which types of missions should be assigned to you.
2019 Proposed Timeline

- **February 2019**
  - State Wide UAS Program Survey
- **March 2019**
  - UAS Regional Standards Content Review
- **April 2019**
  - TDEM Conference Survey Results/Training & Certification Standards
- **August 2019**
  - Statewide Site Visits
- **September 2019**
  - Statewide Council of Governments Consensus
- **November 2019**
  - TDEM Presentation for Validation
- **January 2020**
  - Finished
Questions/ Discussion
UAS Presentation Survey

• Presentation Survey Link: https://forms.gle/TtveQojj7G3L1z2E8

• Statewide UAS Resource/ Program Survey Link: https://forms.gle/xuPpWA1TteE45JgV8
References

• NFPA 2400 Standards for Small Unmanned Aircraft Systems (sUAS) Used for Public Safety Operations, 2019


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