



Alliance Solutions Group, Inc.

Full-Scale Mass Casualty Incident Training Exercises
Emergency Response Exercise Training
Medical Response Planning
AGENCY MANAGEMENT SOLUTIONS
Occupational Health
CBRN Response Tactics
Hazardous Materials Response Planning
Innovating Concepts...Integrating Technology



Unmanned Aerial System Discussion-based Workshop *Presented at VEMS Mar 30, 2016*

Alliance Solutions Group, Inc.
11818 Rock Landing Drive-Suite 207
Oyster Point Business Park
Newport News, Virginia 23606
Phone: 757-223-7233 | Fax: 801-348-4336
www.asg-inc.org

Workshop Objectives



Integrating UAS into Emergency Response Operations

- Identify applicable mission sets where UAS may expedite achieving incident objectives
- Discuss limitations and obstacles of integrating a UAS into response operations
- Discuss benefits of integrating UAS into response operations
- Identify likely shortfalls in plans, procedures, incident management system, training and logistics which need to be addressed to facilitate successful integration

Take-Away's

- Participants identify several actions that will be necessary to successfully integrate this technology into response operations
- Participants enhance their understanding of the complexity of issues related to employing UAS

Rules of Engagement



Integrating UAS into Emergency Response Operations

Facilitator

- Present the scenario, situation updates and simulated outcomes of decisions
- Facilitate discussion among participants at specific intervals
- Summarize input as needed
- Keep the workshop on schedule to achieve objectives

Participants

- Consider your organization's role in the response and applicability of UAS
- Discuss situation and responses in small groups
- Provide input to entire group
- Focus on the objectives; use the scenario as an aid to thinking through the issues

Background



Integrating UAS into Emergency Response Operations

- 10,000+/yr Hazmat incidents at facilities (Ref: National Response Center, 2014)
- 16,000/yr Transportation Hazmat related incidents (Ref: DoT, 2014)
- Virginia Hazmat Incidents (2015)
 - 806 Hazmat Incidents
 - 14 Fatalities
 - 31 Injuries
 - 187 People evacuated
 - \$700 Million in property damages
 - 26 Incidents in Newport News, VA
 - Diesel fuel and oil – most common products
- Increased volume of Bakken Crude oil



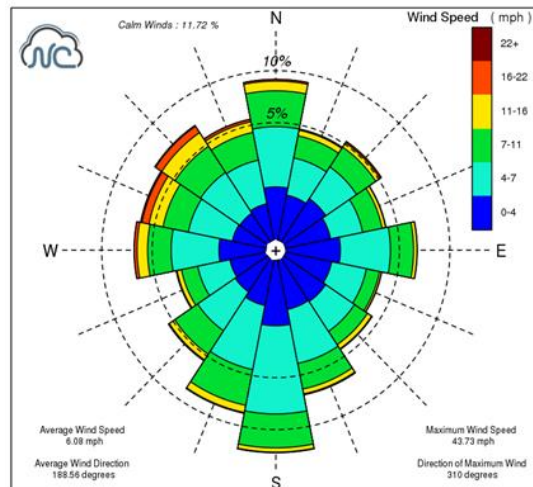
Situation Report

Integrating UAS into Emergency Response Operations



- Newport News, VA
- April 1st; 1200 EDT
- Partly Cloudy Day
- Winds: 090 @ 7-10 knots
- Temperature: 65 F
- Barometer: 30.01 mmHg

Wind Rose for Ft Eustis/Felker (KFAF)
May. 29, 2001 to Aug. 18, 2015

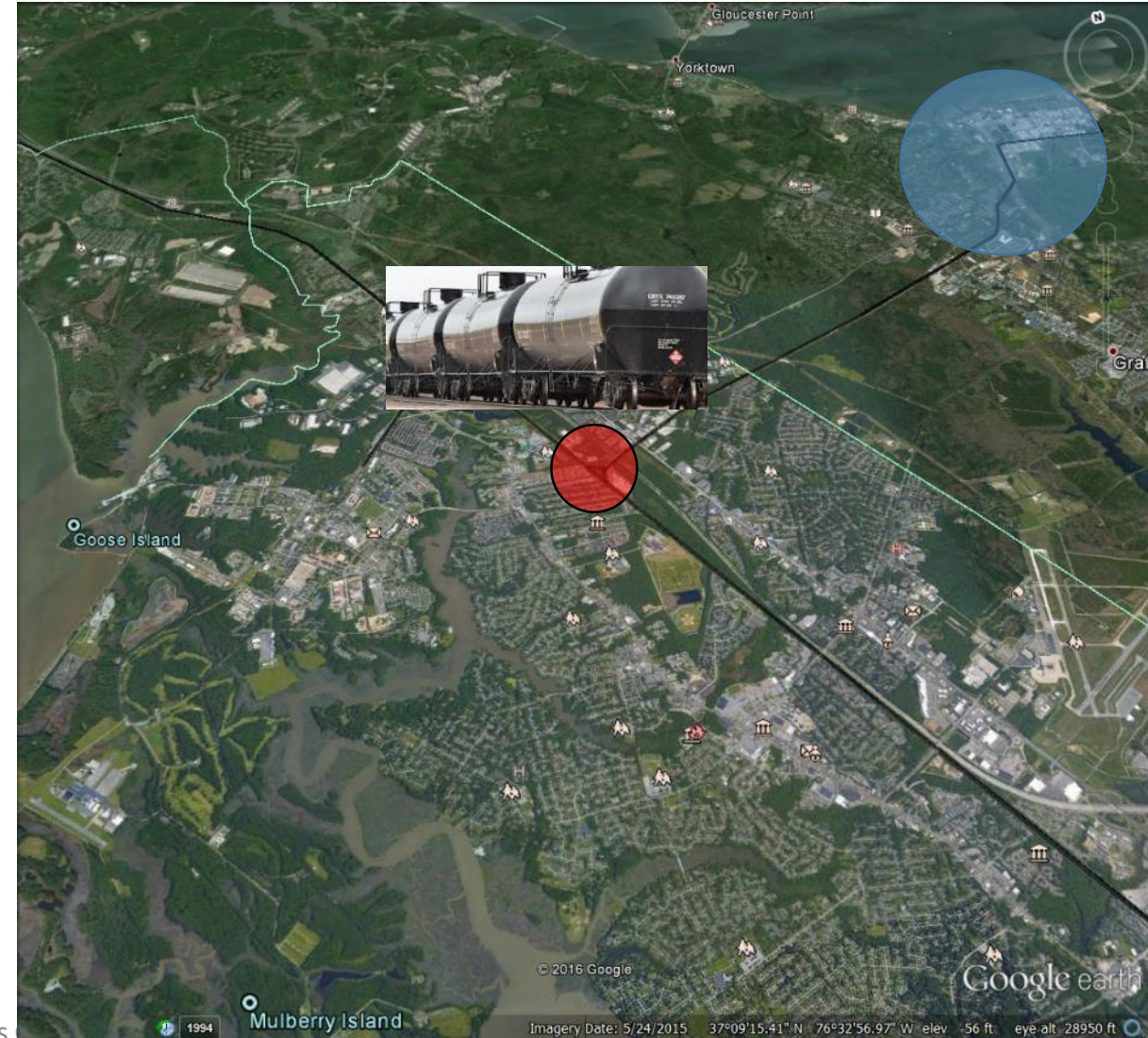


Situation Report

Integrating UAS into Emergency Response Operations



- Crude oil shipment scheduled for Plains Facility
- CSX notifies SERC per EO
- Train derailment at interchange
- NNFD Station 4 responds to scene
- Incident Objectives
 - Save lives
 - Stabilize incident
 - Prevent environmental damage
 - Protect property



Situation Report

Integrating UAS into Emergency Response Operations



- Crude oil shipment scheduled for Plains Facility
- CSX notifies SERC per EO
- Train derailment at interchange
- NNFD Station 4 responds to scene
- Incident Objectives
 - Save lives
 - Stabilize incident
 - Prevent environmental damage
 - Protect property
- FAA issues TFR



Situation Report

Integrating UAS into Emergency Response Operations



- Crude oil shipment scheduled for Plains Facility
- CSX notifies SERC per EO
- Train derailment at interchange
- NNFD Station 4 responds to scene
- Incident Objectives
- FAA issues TFR
- NN EOC established
- Ft. Eustis EOC established
- Regional Hazmat team responds
- Plume model and blast radius



Discussion #1

Integrating UAS into Emergency Response Operations



- If my discipline could employ a UAS, what mission would I request?
 - Fire/Hazmat
 - Law Enforcement
 - Medical
 - Public Health
 - Emergency Manager
 - Public Information Officer
 - Communications
 - Others
- What challenges and limitations would hold my organization back from employing a UAS?



Potential Solution

Integrating UAS into Emergency Response Operations



- NNFD has contract in place with UAS operator on call
- Operator deploys to Incident Command Post with several UAS
 - Geofencing
 - Hazmat detection suite
 - Live feed video
 - Electro-optical sensors (IR)
 - Communications relay
 - 2 hours aloft
 - Operator station with live data geo-sync
 - 2-4 lbs payload

UAS Operator

- Certified
- Licensed Pilot
- FAA Registration



Discussion #2

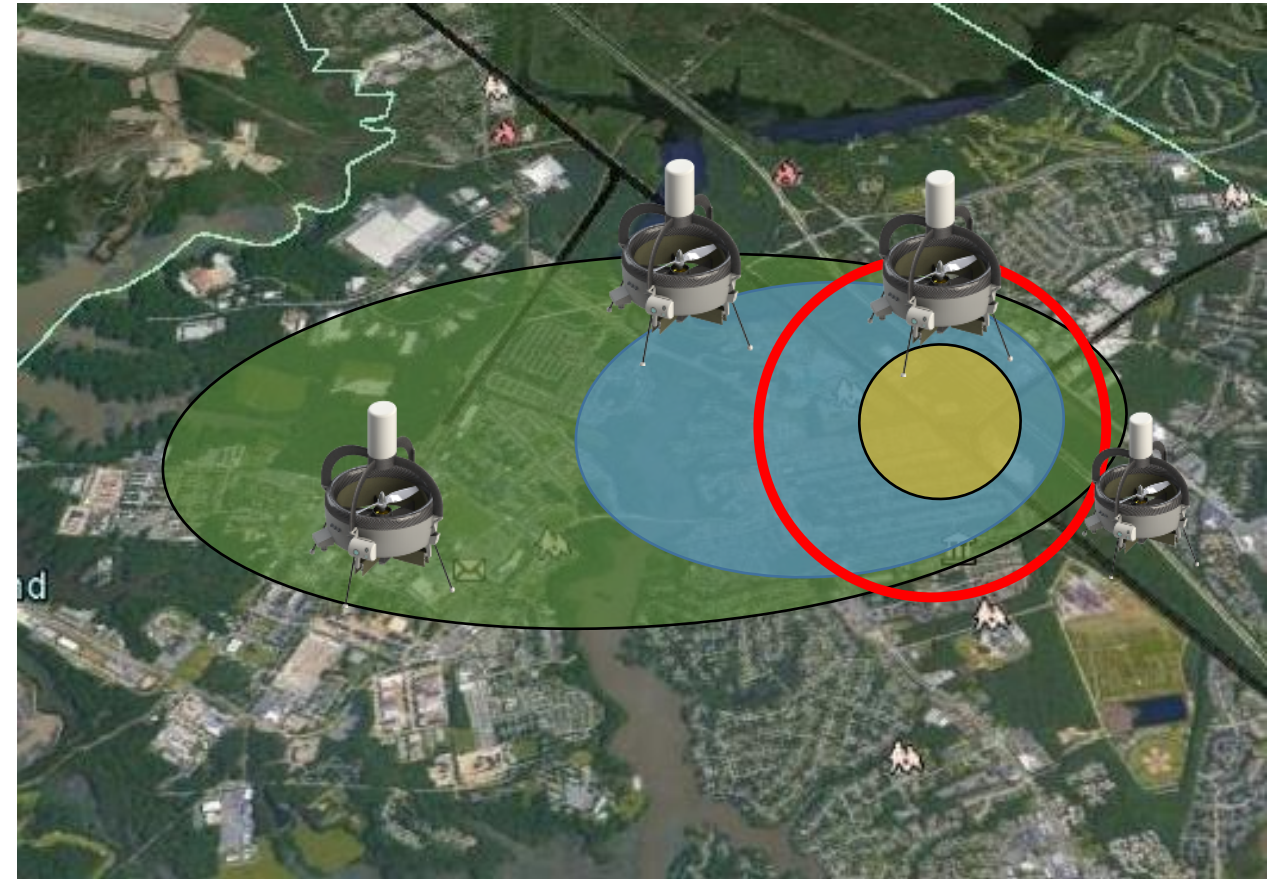
Integrating UAS into Emergency Response Operations



- Given the capability set described, what are some concerns and anticipated limitations associated with integrating the UAS into the response?

- Flight operations
- Communications
- Hazmat exposure
- Public Works
- Coordination
- Public Safety
- Public concerns/privacy
- Interoperability
- Incident Management System

- How could this resource enhance achieving incident objectives?



Situational Update



Integrating UAS into Emergency Response Operations

- UAS redefined the plume based on detection with PID
 - UAS confirmed fire extinguished with IR sensor
 - UAS found two stranded train engineers within hotzone
 - UAS spotted unauthorized entry by news crew into railroad right of way
-
- How could this information support decision making?
 - What other benefits might you expect?



Integration into Response: Plans



Integrating UAS into Emergency Response Operations

- NNFD has a plan for integrating the UAS into their response which includes:
 - Maintaining visual situational awareness
 - Detecting explosive atmosphere and hazard detection
 - Re-defining the cordon
 - Decision support system
 - Search and Rescue mission
 - Expanding Radio communication
 - Locating “hot-spots” to target suppression

Based on your desired mission set, what elements need to be incorporated into your plans and procedures?

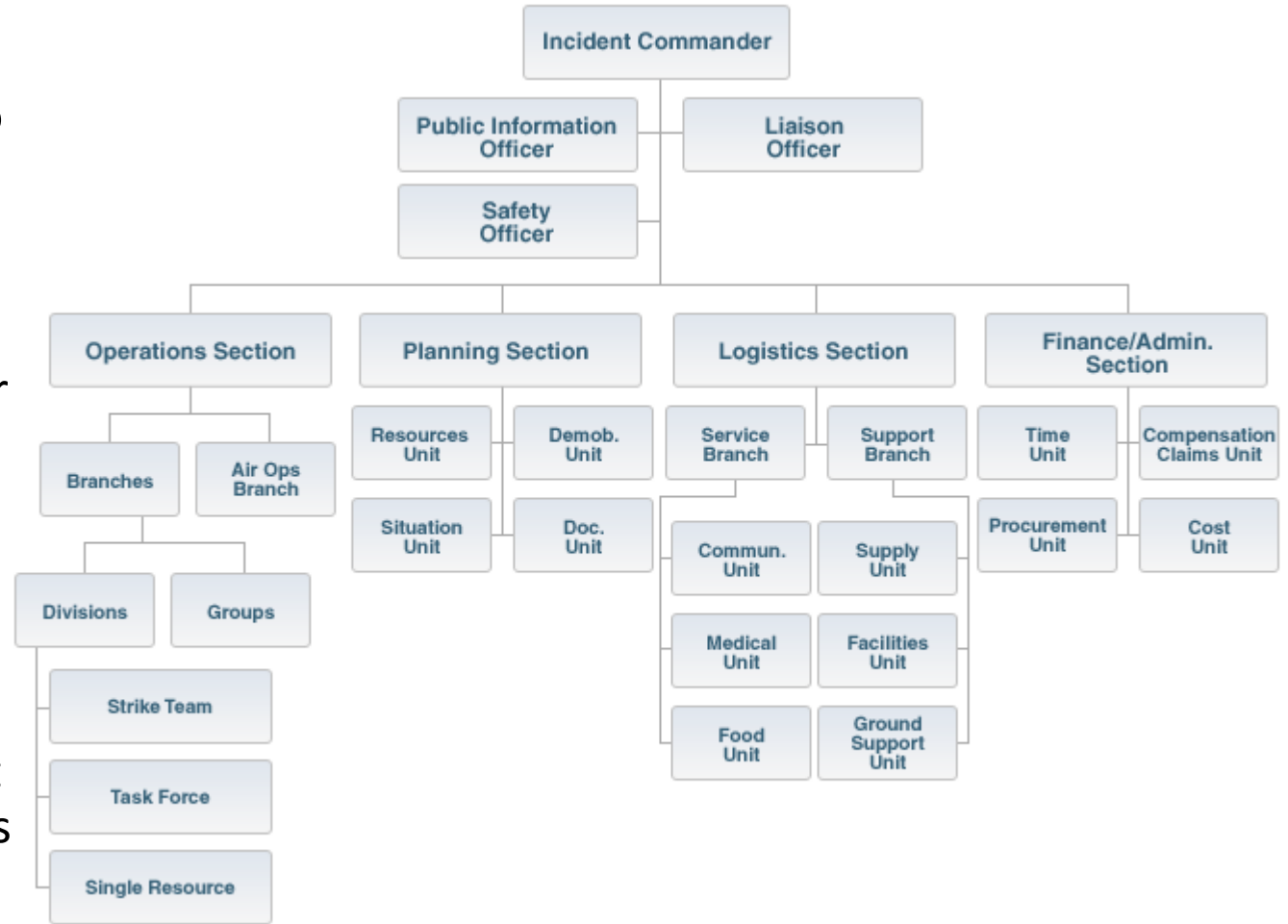


Integration into Response: Organization

Integrating UAS into Emergency Response Operations



- Where does the operator fit into ICS?
- Who coordinates and prioritizes mission requests?
- How could responders and other entities interface with NNFd to request or coordinate missions?
 - Ex: EMS receives dispatch that person sheltering in place within hotzone has chest pain, and EMS wants to fly an AED to the home.
- EOC wants live aerial feed. What interoperability/communications issues need to be addressed?



Integration into Response: Training



Integrating UAS into Emergency Response Operations

- What kind of training will non-operators need to engage properly?
- How will you use the data to support response operations and decision making?
- What opportunities are there to reduce human risk by substituting the UAS? How does this affect training?



Integration into Response: Logistics



Integrating UAS into Emergency Response Operations

- What is involved in maintaining a UAS throughout the response?
- What external considerations need to be addressed during UAS flights?



Workshop Objectives



Integrating UAS into Emergency Response Operations

- Identify applicable mission sets where UAS may expedite achieving incident objectives
- Discuss limitations and obstacles of integrating a UAS into response operations
- Discuss benefits of integrating UAS into response operations
- Identify likely shortfalls in plans, procedures, incident management system, training and logistics which need to be addressed to facilitate successful integration

Take-Away's

- Participants identify several actions that will be necessary to successfully integrate this technology into response operations
- Participants enhance their understanding of the complexity of issues related to employing UAS



Alliance Solutions Group, Inc.

AGENCY MANAGEMENT SOLUTIONS

Hazardous Materials Response Planning

Full-Scale Mass Casualty Incident Training Exercises

CBRN Response Tactics

Emergency Response Exercise Training

Medical Response Planning

Occupational Health

Innovating Concepts...Integrating Technology



Unmanned Aerial System Discussion-based Workshop

Bob Campbell

Robert.Campbell@asg-inc.org

(c)757-303-6669

Alliance Solutions Group, Inc.
11818 Rock Landing Drive-Suite 207
Oyster Point Business Park
Newport News, Virginia 23606
Phone: 757-223-7233 | Fax: 801-348-4336
www.asg-inc.org