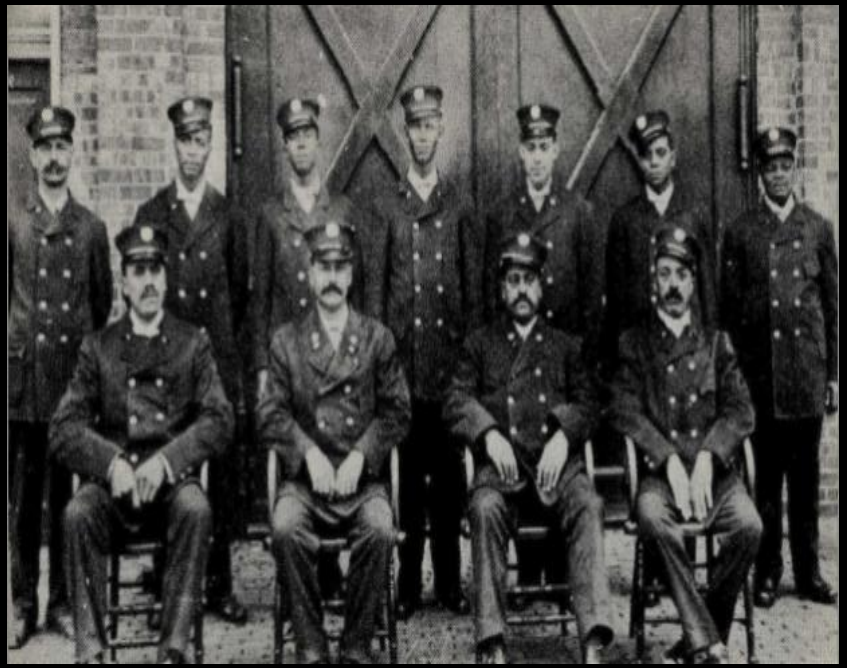
AIR.LAND.WATER

AFD RED TEAM

Assistant Chief Richard Davis
Firefighter Coitt Kessler

AUSTIN
FIRE
®

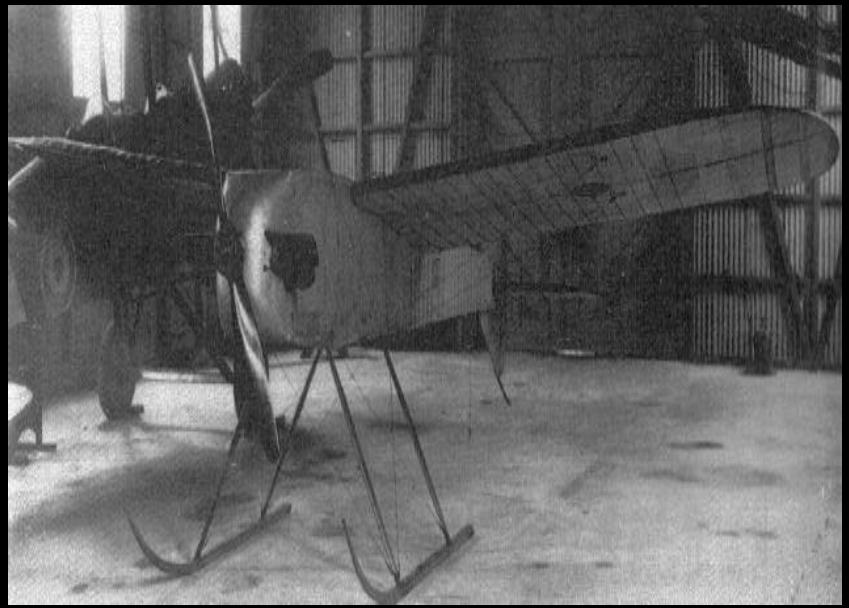
How far have we come?



Still putting the wet stuff on the red stuff

Technological leaps

AM Low's Aerial Target - 1916



Chinese dark sword -2009

Fire Service Leadership

Nation’s first metropolitan fire department with a Certificate of Authorization

World’s first fire based robotics program

Vision

The vision of the RED Team is to enhance firefighter safety and improve emergency response through the use of robotics.

Mission

The mission of the RED Team is to mitigate real-world problems through the deployment of air, ground, and maritime remotely operated resources

It’s not just a tool

– It’s Program Development

January 2014 -

- Executive Presentation
- Eight member team

January 2015 -

- Unfunded
- Staff assignment
- Certificate of Authorization 2016
  - Class C
  - Multi-jurisdictional
  - Nighttime navigation
- Operations

January 2016-

- Unfunded
- Operational relevance – Operational deployment

October 2017-

- Wildfire Division
- Expansion of team
- Dispatch protocols

Proof of concept - Operations

- Testifying for State Senate
- Great Hills Trail
- Memorial Day Flooding
- Hays County missing person
- Hidden Pines Fire
- North Texas Flooding
- Dry Creek Fire
- Halloween Floods
- Utility infrastructure inspections
- Mississippi Tornadoes
- TCSO missing persons
- Vehicle into town lake
- Prescribed burns
- Colorado River SAR
- ETC…….

Collaboration

- International Association of Fire Chiefs – IAFC
- International Association of Fire Fighters - IAFF
- NASA
- National Institute of Standards and Technology – NIST
- DHS / FEMA Robotics Work Group
- National Fire Protection Association – NFPA
- Texas Division of Emergency Management – TDEM
- South West Research Institute – SWRI
- Inter-agency Board – IAB
- Combating Terrorism Technical Support Office – CTTSO
- University of Texas
- Texas A&M Engineering and Extension -TEEX
- Texas A&M Experimental and Engineering Station – TEES
- National Emergency Response and Rescue Training Center – NERRTC
- Lone Star UAS Center for Excellence – LUASC
- Texas Parks and Wildlife Division
- University of North Texas
- Various Police and Fire Departments throughout North America

How Did We Get Here

How did the RED Team come to be?

How did we go from research program to program launch?

Three -P's

Beware of your local environment!

1. **Public** (transparency)
2. **Politics** (notifications and support)
3. **Policies** (privacy, retention, access, insurance, maintenance, inventory, etc)

Politics

Public

Transparency

Policies

Operational manuals anyone?

Dynamic Processes

- Staffing plan
- Communication plan
- Deployment plan

Team Improvements

Airborne Law Enforcement Association

"To Serve and Protect From The Air"

This Certifies That

RICHARD DAVIS

AUSTIN FIRE DEPARTMENT

successfully completed the

FAR Part 107 UAS Remote Pilot Exam Course

(18 Hours of Instruction)

Austin Fire Department

Austin, Texas *1 March 2017*

Don Roby
Training Program Manager, ALEA

Steve Roussell
President, ALEA

Tradition vs Technology

- Technology in the 21st Century workplace
- Millennials are shaping the status quo
- Change Recruitment & Outreach Strategies

Naked in the swimming pool

https://drive.google.com/a/chris.com/file/d/0BwXV-9dCZ6bvMkFENTByUFFPRVU/view?usp=sharing

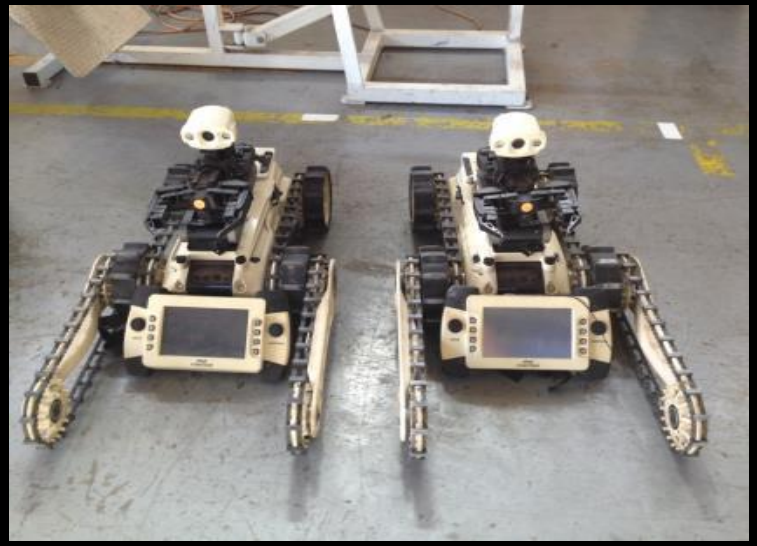
Working Towards The Future

Austin Fire Department

Water Robots

ROV- Remotely Operated Vehicle

UUV – Unmanned Underwater Vehicle



Ground Robots

Air Robots ?

Aerial Robots

Tethered UAS

- Public Perception
- Policy and Procedure
- Funding
- Buy-In from Incident Command
- Technology – Product Development

Program Development

Public Perception

Don't Want Drones In Your Space? Johnny Dronehunter Will Shoot Them Down For You

Yep, this is happening

Creativity -19 Y/O

Very cool

Taking the Scary Out of It

Public Outreach

Policy and Procedure

COA vs. Part 107

Pro's

- Seven county jurisdictional
- Controlled Airspace
- Night Waiver
- Self certification

Con's

- Notifications
- Pen and ink changes
- Self certification
- Buy your COA

COA

Part 107

Pro's	Con's
• Minimum FAA standard • Nation wide • No notifications • Waivers available	• "G" airspace • Waiver timeline

- **Someone to pay attention to us**
- **Part 107 as the minimum standard**
- **Online part 107 testing**
- **Expedited waivers (controlled airspace, night-time, etc)**

SO….. What do we need?

$ 145,000

$ 14,200

Funding

Buy-In From Incident Commanders

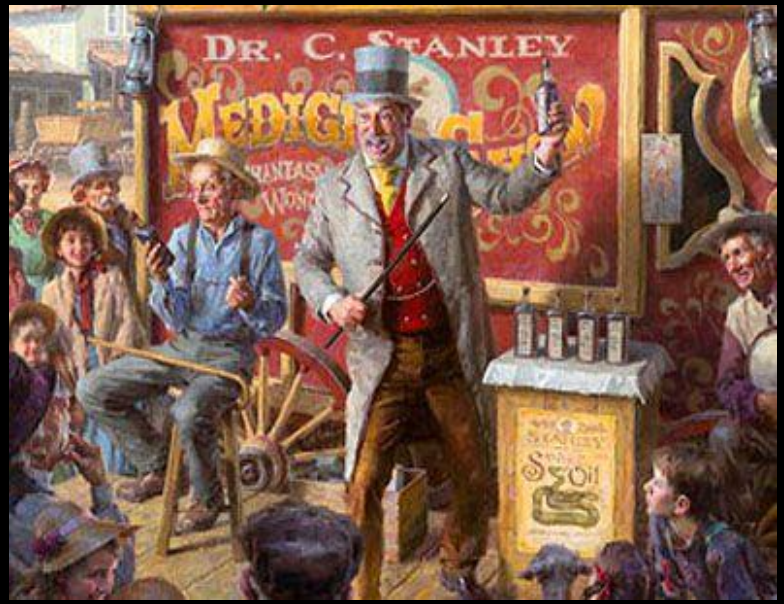
The next generation?

Hardware Development

- Identifiable
- Affordable
- Payload options
- Night time lighting
- Waypoint navigation
- Weather hardened
- Extended endurance
- Customer service - **Local**
- Partnership -Relationship

- Real Time Video Transmission
- Notifications - NOTAMs, TRACON, ETC
- Resource and Asset Management
- Mapping

Software Development



Buyer Beware

- Researchers
- Industry
- First Responders

NIST

Creation Of The Next Generation

NIST

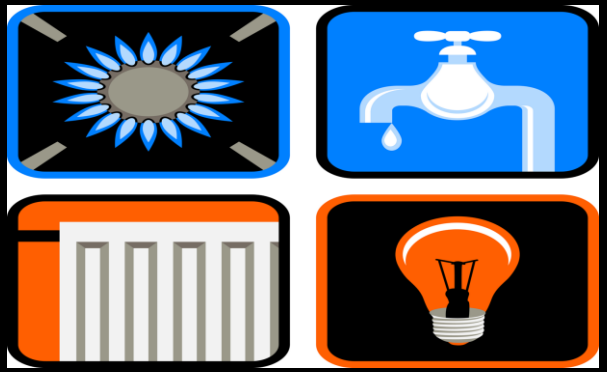
Creation Of The Next Generation

What's next?

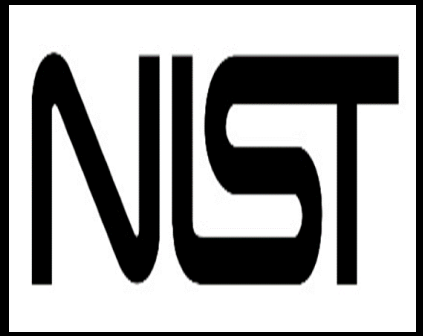
Joint Operations

Joint operations

Public Safety Flight
FIRE
DEPT.
POLICE
DEPARTMENT
psFlight.org



The next frontier


NIST

AIRBORNE LAW ENFORCEMENT ASSOCIATION
TO SERVE AND PROTECT
FROM THE AIR

NFPA®

A
ORGANIZED
I
F
F
FEB
1918
28
AFL-CIO
CLC

ORG 1873
INTERNATIONAL
FIRE CHIEFS
ASSOCIATION

The RED Card

- **MOU’s / Interlocal Agreements**
- **Policy and Procedure**
- **Command**
- **Pre-requisites - NIMS and ICS**
- **Communications**
- **Training**
- **Interoperability**
- **Data - when, where, how**

Considerations

Questions