

Deployable Aerial Communications
Architecture
Light Fixed Wing Asset Successes
Using USAF Auxiliary/Civil Air
Patrol Assets

Vincent "Tex" Boyer (K4TEX)

Telecommunications Manager &

Regional Emergency Communications Coordinator

FEMA Region IV

Atlanta, GA

Whole Community Initiative

§ ...*The “Whole Community” initiative recognizes that FEMA is not the nation’s emergency management team—FEMA is just part of the team.* – FEMA Administrator Craig Fugate (03/11)

One Approach- Use Local Volunteer Resources

- § Single engine, fixed wing aircraft high-medium altitude orbits
- § Deployable/tactical repeater packages
- § Broadband, multi frequency antennas installed on aircraft
- § Volunteer agency assets equals low cost to users



1998 Florida Wildfires

- § Multiple large complex fires
- § Requirement for wide area VHF communications for fire fighting operations
- § FL Wing CAP lifted forest service repeaters in race track orbits providing vital communications links



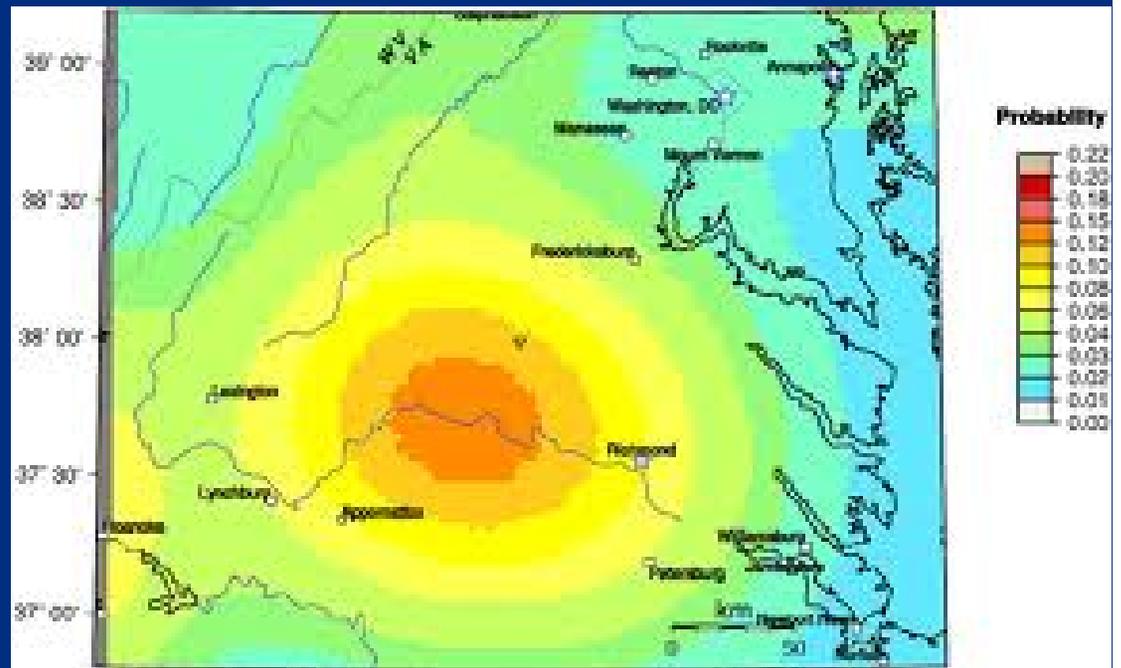
2009 Kentucky Ice Storms

- § State of Kentucky request
- § KY Wing CAP flew tactical repeaters to provide critical communications on KY selected frequencies
- § Dusk-to-dawn flight ops
- § Supported door-to-door survivor search by the KY National Guard



2011 VA Earthquake

- § Richmond, VA area earthquake
- § Cellular network saturated
- § VA Wing CAP flew tactical repeaters providing real time, emergency communications



2011 Texas Wildfires

- § Forest Service personnel using limited range, handheld radios
- § Life safety environment required USFS repeater to be flown for communications.
- § TX Wing CAP flew dawn-to-dusk from 22-29 April, total 120 air hours , 65 sorties, 368 man-days.
- § Used local squadrons
- § Total cost was \$10,259



2011-FEMA US&R Task Forces

§ Texas TF1 is currently in discussions with Texas Wing CAP to equip identified Texas CAP aircraft with broadband antennas to support TXTF1 communications operations.



Lessons Learned-Planning

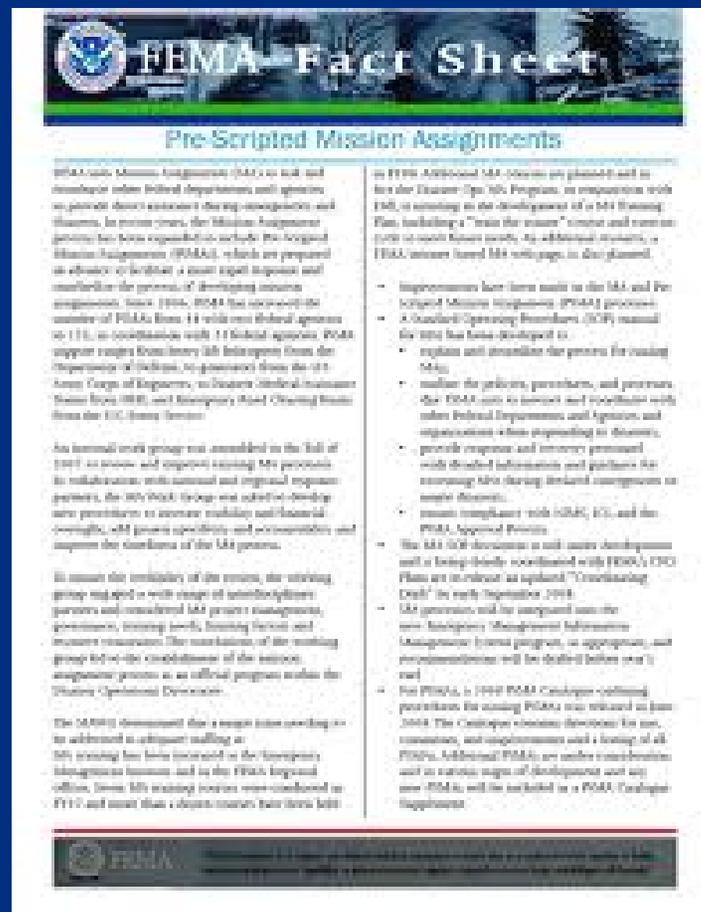
- § Prepare for it now, build it into your plans
- § Test system operations before you need it
- § Minimal cost for return on investment (cost of antennas-vs-benefit of reliable-flexible communications)
- § CAP is a cost efficient asset to lift ECOMM packages



Lessons Learned-MAs

§ Pre-scripted mission assignments for supporting emergency communications will limit the time to wheels up for the deployment of airborne repeater platforms.

§ Needs to be established prior to the event



Lessons Learned-Antennas

§ For the maximum flexibility the aircraft need to be equipped with external antennas for

§ 136-174 MHz

§ 380-512 MHz

§ 700/800 MHz

- 3 separate antennas or 2 dual band-broad band antennas



Lessons Learned-Power

- § Aircraft need to be configured to support multiple forms of power connections.
- § Temporary plug assemblies are not reliable for life safety communications.
- § Agencies need to establish beforehand their power requirements and connections for their equipment.



CAP A/C Auxiliary Power Connector

CAP's new Cessna's are equipped with a standardized connector for supplying power to portable equipment. This connector has three pins and is suitable for both +12V DC and +24V DC connections.

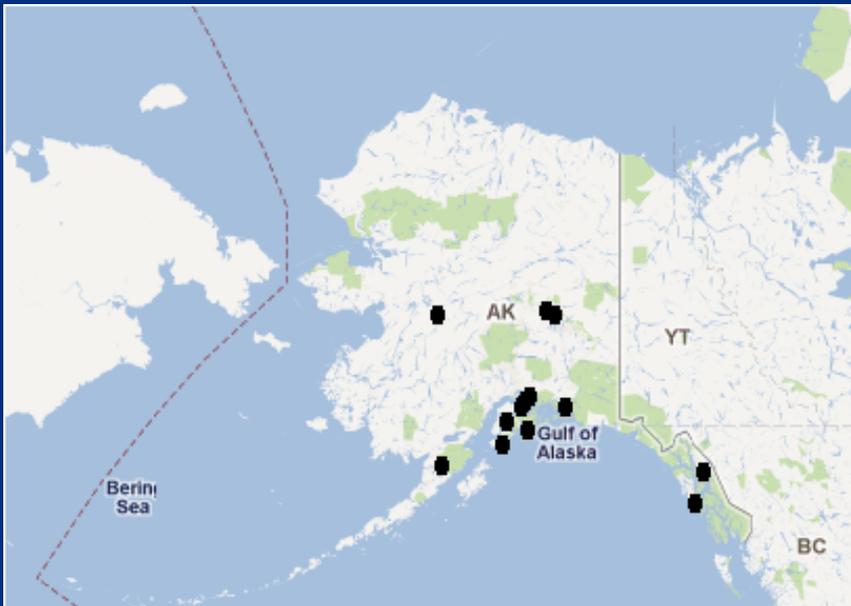


CAP CONUS Aircraft Locations



508 Aircraft in CONUS

CAP OCONUS Aircraft Locations



29 Aircraft in Alaska Wing



10 Aircraft in Hawaii Wing



3 Aircraft in Puerto Rico & Virgin Islands Wing

Summary

- § FEMA's "Whole Community" Initiative engages local assets to improve community resilience and self-reliance during response operations
- § FEMA recognized the need for rapidly deployable LMR networks based on aerial platforms in the 1990's
- § FEMA has partnered with the Civil Air Patrol/US Air Force Auxiliary to provide a low cost solution to this problem using volunteer resources from the affected communities
- § FEMA continues to broaden the use of local volunteer resources to solve local response problems
- § Preparedness planning and preparation is the key to success

Questions?

§ Please contact:

§ Vincent L. “Tex” Boyer Vincent.Boyer@FEMA.GOV