

# Unmanned Aircraft Systems in the National Airspace System

By:

Randy Willis, Air Traffic Control Specialist,  
FAA Unmanned Aircraft Systems Group

Date: February 4, 2011



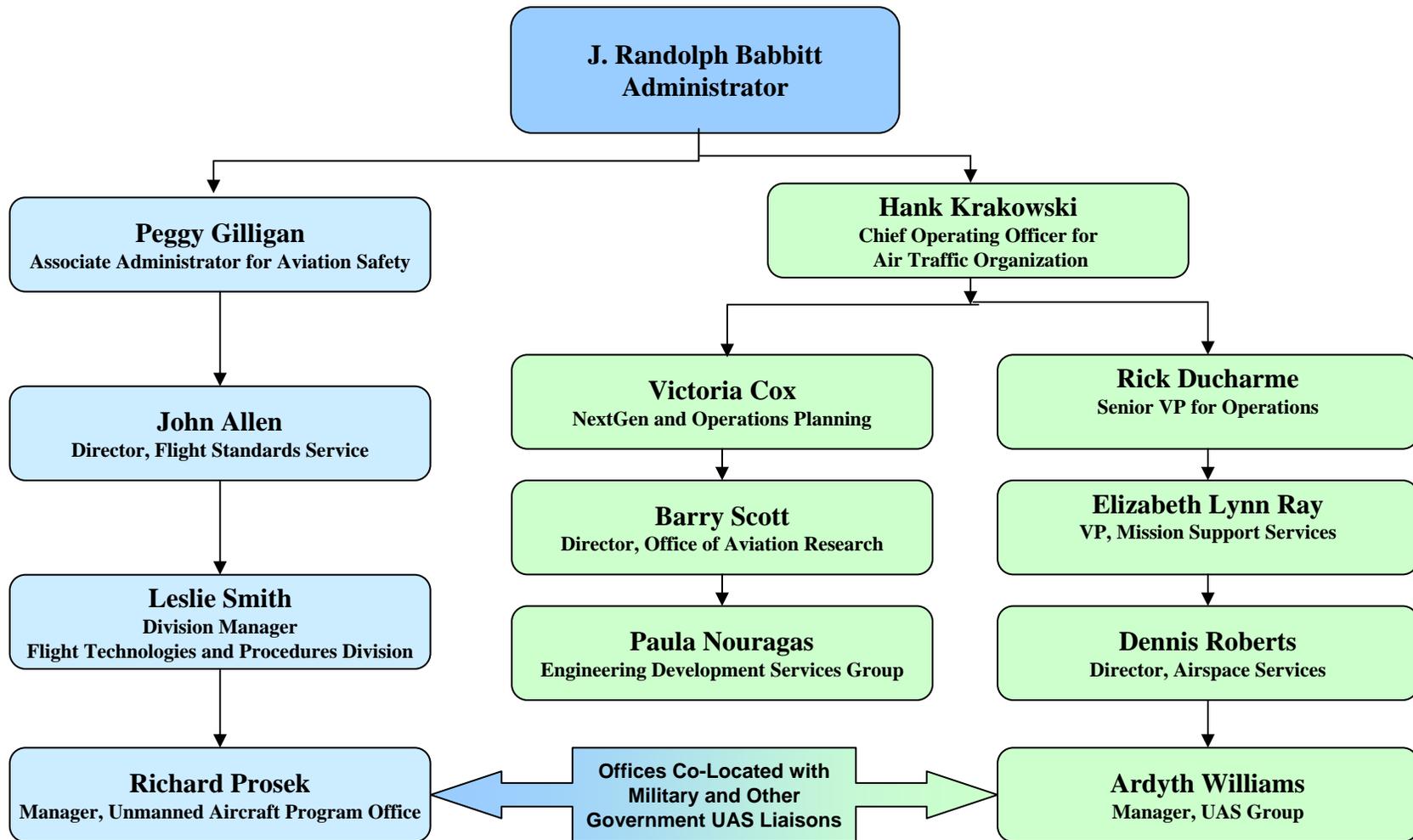
Federal Aviation  
Administration



# Briefing Plan

- **FAA Structure**
- **What is an Unmanned Aircraft System (UAS)?**
- **Who is Operating UAS?**
- **What are they doing?**
- **When are they flying?**
- **Where are they flying?**
- **National Airspace System**
- **Why do we Allow UAS in the National Airspace System (NAS)?**
- **How does the Certificate of Waiver or Authorization keep the NAS Safe?**
- **Questions**

# Federal Aviation Administration



# What is an Unmanned Aircraft?



# The System



# Who is Operating UAS in the National Airspace System?

## Public Use Aircraft – Certificate of Waiver or Authorization

- **Department of Agriculture**
- **Department of Commerce**
- **Department of Defense**
- **Department of Energy**
- **Department of Homeland Security**
- **Department of Interior**
- **Department of Justice**
- **NASA**
- **State Universities**
- **State Law Enforcement**

## Civil Aircraft – Special Airworthiness Certificates - Experimental

- Issued East to West Coast
  - **Raytheon**
  - **AAI Corporation**
  - **General Atomics**
  - **Boeing**
  - **And more**

# What are they doing?

- Operational Missions
- Training for Operational Missions
- Research
- Sensor Development and Testing
- Marketing
- Border Patrol
- Firefighting
- Disaster Relief
- Search and Rescue



# When are they flying?

- Daily
- Mostly Daylight Operations
- Some Night Operations



# Where are they flying?

- Class A, C, D, E, and G Airspace
- Domestic and Oceanic
- Outside of SUA
- **Not in Class B Airspace**
- **Not in Most Appendix D to Part 91 (30 nm Mode C veil)**
- **Not Over Populated Areas (basically-yellow on the sectional)**

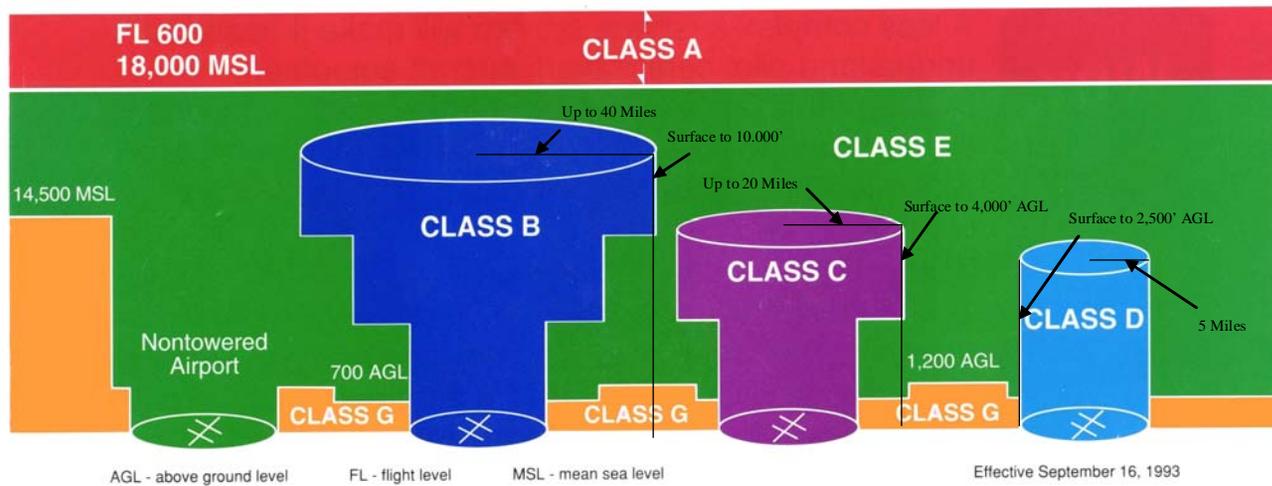


# How can the FAA allow the UAS to fly in the US NAS?

- International Civil Aviation Organization – Chicago Convention
- Title 49
- Federal Aviation Regulations / Federal Register Publication
- FAA Orders / Notices and Policies

# National Airspace System

## Classes of Airspace



# Is an Authorization Required?

- Completely in active Restricted, Warning Area airspace approved for aviation activities – **No FAA approval - range rules apply**
- **Private recreational use** – Advisory Circular 91-57 apply
- **Civil operators** - Special Airworthiness Certificate - Experimental Category
  - FAA determines Airworthiness
  - Only one airframe (issued an “N” number)
  - No commercial operations
- **Public operators** - Certificate of Waiver or Authorization (including Class D/G DoD MOA)
  - Public Use Aircraft
  - Agency determines airworthiness
  - FAA policy 08-01 is current GUIDANCE
  - All are required to have a NOTAM issued

# Certificate of Authorization (COA)

- FAA Form 7711-1
- Authorization, not waiver, to operate UAS in the NAS
- Consists of 4 sets of provisions:
  - General
  - Safety
  - Standard
  - Special

# Certificate of Authorization (COA)

- **Special provisions:**

- Tailored to individual mission and ATC facility requirements
- Imposes requirements on the operator
- Mitigates those sections of 14 CFR part 91 that UAS are unable to comply with

# Administrative Review

- **Application filed “on-line”**
- **Confirm all attachments are readable and complete**
- **Application meets general safety provisions**

# Feasibility Check

- **The airspace experts review and ensure the operation will not severely impact the efficiency of the National Airspace System**
- **Determines if UAS will enter an Air Traffic Facility that has not worked UAS before**

# Validated Application

- **Once the operation is determined to be feasible**
  - Email sent to proponent advising them of the status
  - Package sent to the Aviation Safety Inspectors for review

# Operational Safety Review

- **Aviation Safety Inspectors with the Air Traffic Experts review the application**
- **Standard FAA policy and procedures are applied**
- **Special Provisions are determined**
  - Airworthiness of Aircraft
  - Pilot Qualifications
  - Airspace and location

# The COA

- **Special Provisions are penned**
- **Air Traffic and Flight Standards Coordination is completed**
- **COA is signed and issued for a maximum of one year**

# COA Numbers—as of 21 Jan 2011

- **Total Active COA's = 266**
- **Total Pending COA's = 151** (includes renewals)
- **Total Issued in CY 2010 = 298**

# Special COA's

- **DoD / FAA Memorandum of Agreement**
  - Class D at Non-Joint Use Military Airfield
  - Class G over Military Lands
- **Disaster Relief COA**
- **Emergency COA**

# Emergency COA

- **Emergency = For this process, the definition of “Emergency” is; either a *distress* or *urgency* condition where there is or has the extreme possibility of loss of life.**
- **Manned flight is not possible due to hazard or the operation cannot be conducted safely with manned aircraft**
- **The requester must have a current Certificate of Waiver or Authorization/Special Airworthiness Certificate for the platform that is requested.**
- **Processed in minutes/hours depending on complexity of mission**

# Special Airworthiness Certifications, Experimental Category (SAW-EC) - as of 21 Jan 2011

- 18 active certificates on 17 aircraft types
- Fixed wing, powered lift, airships and optionally-piloted aircraft
- **FAA Order 8130.34A**

# Information

**<http://www.faa.gov/go/uas>**

**Ardy Williams, Air Traffic Manager, Unmanned Aircraft Systems Group  
(202) 497-7688**

**[Ardyth.williams@faa.gov](mailto:Ardyth.williams@faa.gov)**

**Randy Willis, Air Traffic Control Specialist, Unmanned Aircraft System  
Group (202) 385-4661**

**[Randy.willis@faa.gov](mailto:Randy.willis@faa.gov)**

Questions?