



Colorado

Multi Mission Aircraft

& CO-WIMS





A Little History.....

- Colorado is a “local control” state.
- Wildland fire management responsibility was moved from the Colorado State University system to the Department of Public Safety on July 1, 2012.
- Senate Bill 13-245, created the Colorado Firefighting Air Corps (CFAC), and required that DFPC submit a report to the legislature by April 1, 2014 recommending what the CFAC should consist of.
- MMA program stood up on September 1st, 2014.

The Multi-Mission Aircraft



- Pilatus PC-12 aircraft
 - FAA certified airframe and operations
 - Pressurized, high-altitude, affordable, and long endurance
 - Night operations
- Systems installed:
 - Color and thermal cameras
 - Fire detection
 - Fire mapping
 - Firefighter safety overwatch
 - Evacuation monitoring
 - Broadband internet
 - CO-WIMS access
 - Direct delivery of imagery and surveillance information
 - Internet chat, real-time video, and email
 - Data and image processing
 - Interoperable voice radios
- Minimum crew of two
 - Pilot and Mission System Operator (MSO)
- Based in Centennial, CO
 - Deployable to many forward operating locations

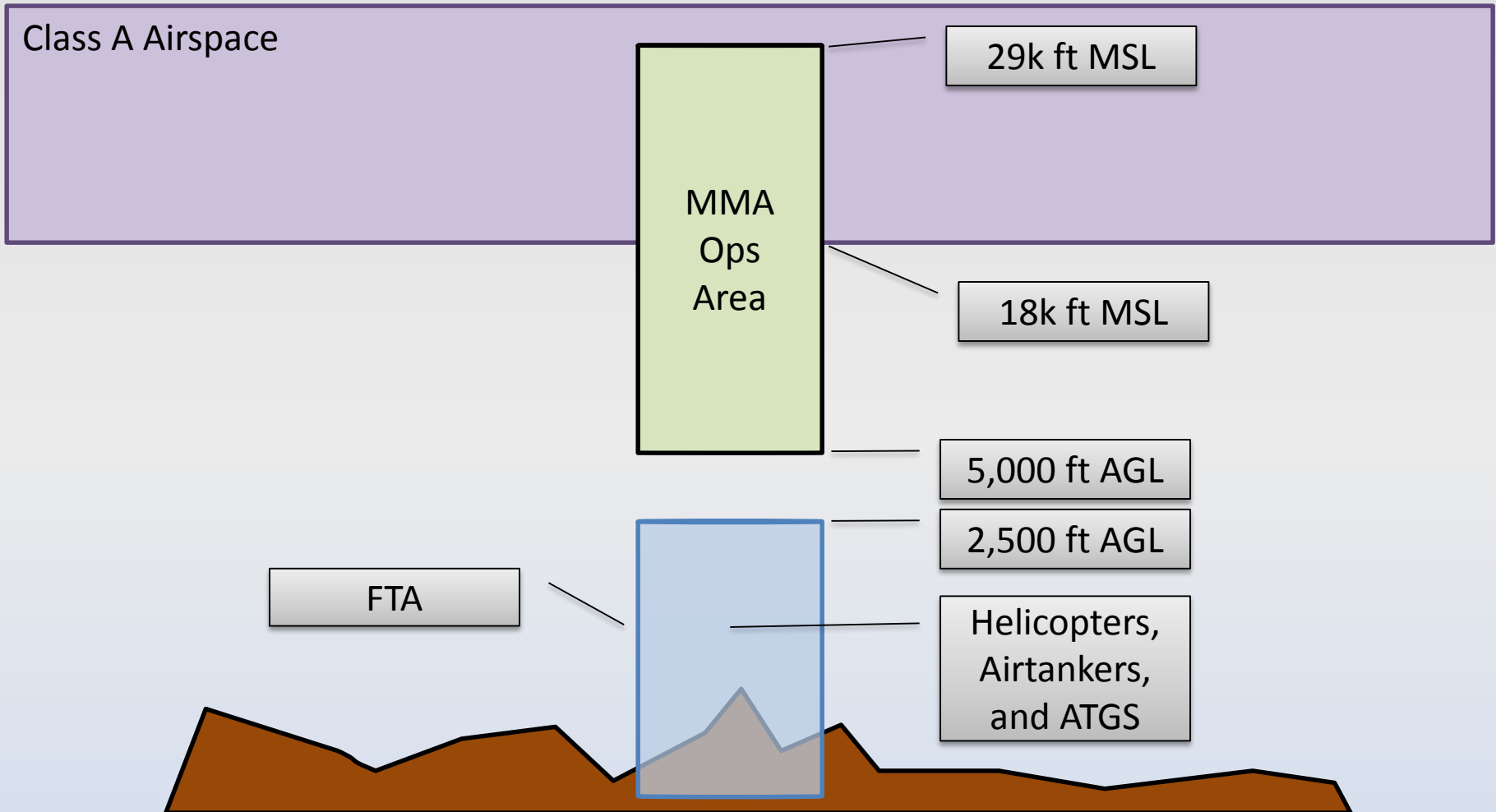


On-Aircraft View



- Small fire detection – [Video](#) – [YouTube](#)
 - [Example 2](#)
 - [Example 3](#)
- Fire Behavior – [Video](#) – [YouTube](#)
- Personnel Overwatch – [Video](#) – [YouTube](#)
 - [Example 2](#)
- Fire Mapping – [Video](#) – [YouTube](#)
- Aviation Monitoring – [Video](#) – [YouTube](#)
- Prescribed Fire Monitoring – [Video](#) – [YouTube](#)

Where the MMA Operates



The MMA Does Not Need to Enter the FTA!

How Will the MMA Help Me?



- Where is the fire?
 - Smoke reports
 - Fire maps
 - Control line monitoring
- Where are my people
 - Safety overwatch and evacuation vectoring directly to ground crews
- Fire behavior description
 - Spread rates and fire progression
 - Spot distances
- Mop-up surveys
- Damage Assessment - [Photo](#)
- Aerial Supervision

Limitations and Caveats



- The MMA can not see through clouds
- Availability is subject to:
 - Other requests and priorities as determined by the DFPC
 - Aircraft maintenance issues (typically 90+% available)
 - Weather
 - Low clouds over the target area
 - Severe weather conditions at the aircraft takeoff location or landing zone
- The MMA does not produce survey quality imagery
 - Images loaded in CO-WIMS are typically correctly registered within 3%-8%
 - Dynamic, mountainous terrain affects accuracy (flatter is better)
 - Distance from the aircraft affects accuracy (closer is better)
- Response time
 - “High Alert” status – airborne 20 minutes after notification
 - Defined as April 1 through October 31, can be extended or modified at DFPC discretion.
 - “Standard Alert” status – airborne 4 hours after notification
 - Transit time <45 minutes to anywhere in Colorado
- Loiter time as much as 5+ hours

Communications



- VHF Radios
 - The MMA meets the avionics requirements for a type I ATGS platform.
- UHF Radios
 - 8CALL90, 8TAC91, 8TAC92, and 8TAC93
- Google Chat & Email



Other Missions



- CO-WIMS and the MMA are built with wildfire in mind, but are useful for many missions
 - Search and Rescue
 - Natural disaster response – floods, earthquakes, search and rescue efforts
 - Man-made events – chemical spills, border patrol, terrorist attacks, riots, and other public safety incidents
 - Research and development – agricultural tasks, environmental monitoring, and wildlife and habitat survey

Cost and Getting Access

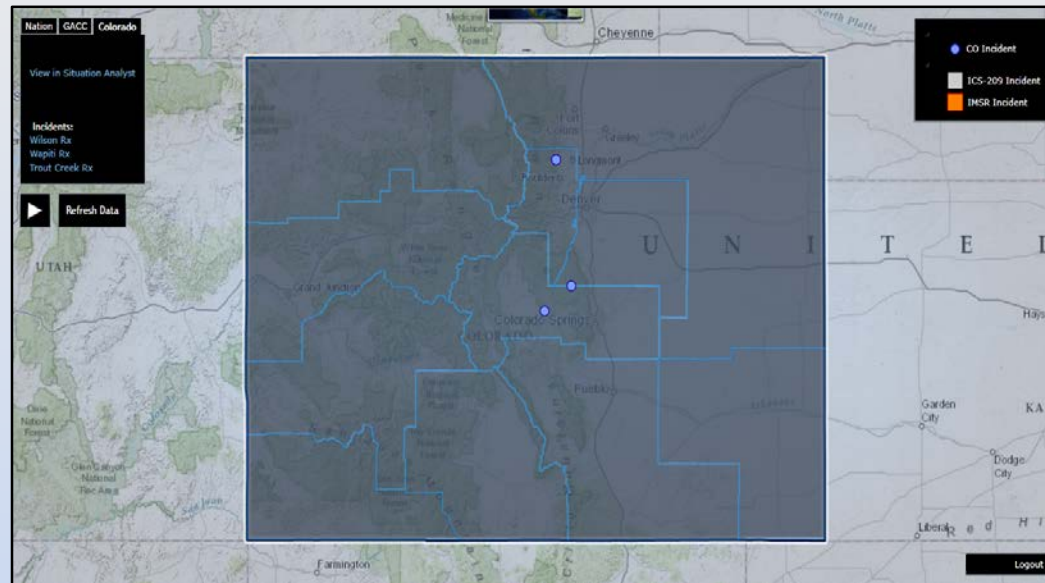


- Local Government Agencies
 - No cost for fire detection missions
 - No cost for the first operational period of an incident
 - Subject to negotiation and cost share agreements for subsequent operational periods
- Federal agencies
 - Detection flights are often no cost, as the aircraft is flying local responsibility areas concurrently.
 - Incident cost - \$3300/day, \$1500/hour
 - Daily availability often waived in state
 - Ordered through ROSS as an “Infrared Flight”



CO-WIMS

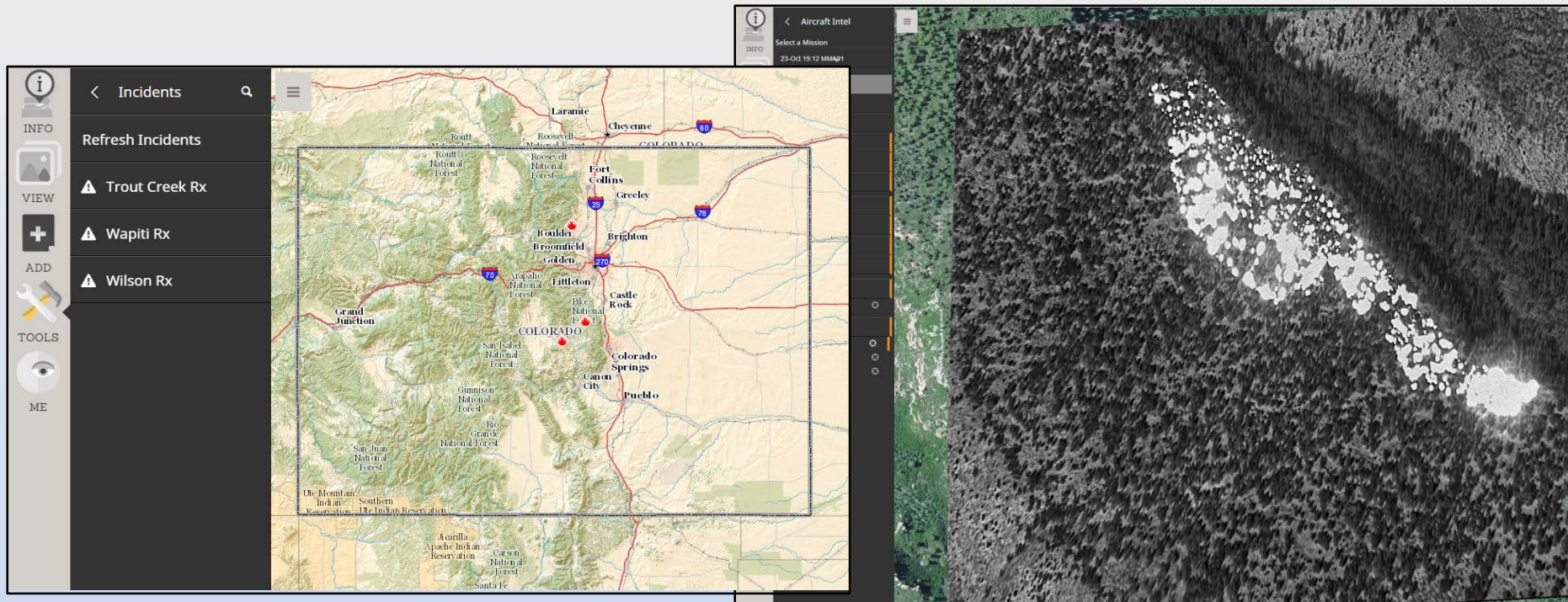
Colorado Wildfire Information Management System



Why Should I Care About CO-WIMS?



- CO-WIMS brings you
 - An up-to-date picture of the wildfire situation across the state (and beyond, actually – across the US)
 - Maps, and imagery from MMA aircraft of wildfire incidents in Colorado



Questions?

