Weather Camera Program Update

Program Update

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FAA SYS OPS_AJR-B200

Presented to:

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Weather Camera Program

Our Mission
Improve Aviation Safety and Efficiency in the NAS

Goals
- Reduce weather-related aviation accidents
- Reduce weather-related flight interruptions
- Improve aviation flight decision making
FAA Weather Cameras: Needs-Driven Innovation
Look Before you Fly, versus Fly out and take a look!

- Improves Pilot Self-Briefing, Pre-flight and “Go/No-Go decision making”
- Reduces accidents, fatalities, and weather-related flight interruptions
Weather Camera Program

Camera Sites
- 230 Alaska FAA Camera Sites
- 215 NAV Canada ‘Hosted’ Sites
- 13 Colorado Dot ‘Hosted’ Sites

Website Data Sets
- https://weathercams.faa.gov
  - Images, METARS, TAFS, PIREPS
  - Satellite, RADAR, RCO/RCAGs
  - Airports, Sectionals, NOTAMs, & more.

Wide Range of Users
- GA, Part 121/135/91
- Helicopter, EMS, SAR, Military
- NOAA / NWS, Marine, R&D, NextGen Development
Route-based Flight Decision Making
Weather Camera System Architecture

Vaisala

WXT-536
Winds speed/Direction
Temperature
Humidity
Rainfall

Cloud Network

Cloud Service Network
2019 Cloud Migration

Cameras
IP/POE
Weather Proof
RMM/RMC
Heated Lenses

Camera Control Unit
RMM/RMC
Self repairing
Low power
Low Cost

I.P. Telecomm
Cellular
VSAT
Radio Link
Cable Modern
DSL, Others

 Websites:
https://avcams.faa.gov
https://avcamsplus.faa.gov
Cape Spencer Lighthouse, Alaska

Grave Point, Alaska

Misty Fjords
Baseline Program Performance Metrics

**Safety:** Reduction of *Weather-Related Aviation Accidents*

*(2007 Accident Baseline = 0.28 weather-related accidents per 100,000 hours of operations)*

- 2008: Target = 0.24, Actual = 0.21
- 2009: Target = 0.22, Actual = 0.21
- 2010: Target = 0.20, Actual = 0.17
- 2011: Target = 0.18, Actual = 0.13
- 2012: Target = 0.17, Actual = 0.17
- 2013: Target = 0.16, Actual = 0.13
- 2014: Target = 0.15, Actual = 0.04

*(85% reduction 2007 - 2014)*

**Efficiency:** Reduction of Weather-Related Flight Interruption hours

*(2007 Baseline = 15,374 hours of weather-related flight disruptions)*

- 2008: Target = 11,327, Actual = 13,588
- 2009: Target = 9,748, Actual = 8,709
- 2010: Target = 8,370, Actual = 8,149
- 2011: Target = 7,941, Actual = 5,533
- 2012: Target = 7,724, Actual = 5,442
- 2013: Target = 7,503, Actual = 5,286
- 2014: Target = 7,369, Actual = 5,129

*(69% reduction 2007 - 2014)*
August 2013: NTSB Safety Recommendations

- **A-13-025** – Establish WCAM Service in Hawaii
- **A-13-026** – Establish WCAM Services in CONUS
- **A-13-027** – Enable Flight Service Specialists to brief images as a part of pilot weather briefings.
April 15, 2020, FAA Joint Resources Council approves camera services outside of Alaska

1. **Hawaii**: Implement FAA-owned camera systems
2. **CONUS**: Implement Image Hosting Partnership with State DOT’s, Airports, and Municipalities
3. **Future Expansion**: Conduct Acquisition Business Case Analysis to fund additional systems in Alaska and CONUS
Hawaii Camera Installations

23 FAA Camera Facilities
- FAA Owned and Maintained
- Jan 18, 2020 - Engineering Surveys completed on Kauai, Maui, Molokai, Lanai.
- Remaining Island surveys TBD
- Construction/Installs start April 2021
- Estimated completion Sep 2022
Baseline Program Performance Metrics

Camera Siting Methodology

- Direct coordination with user community SME’s
- Route-Based Camera Service Areas Defined
- Site Surveys/Selections determine best-fit locations
- User inputs determine camera view-angles
- Gap fillers identified and filled
Enables State DOT’s to participate in the FAA Weather Camera Program and Benefits

- State DOT’s own and maintain camera systems
- FAA shares designs/technologies for installation and operations
- FAA retrieves, formats and integrates images onto its website: https://weathercams.faa.gov
13 Mountain Pass WCAMs

- Transfer FAA Technology and Robust Camera Capability
- FAA assisted with initial installs
- Images Integrated in WCAM Website
- Ten additional installs planned in 2021