California Department of Transportation

UAS Operations

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Aeronautics’ Agenda

- California Department of Transportation Overview
- Division of Aeronautics Mission, Offices & Partners
- Importance of Aviation to California
- Caltrans’ interest in operating UAS
  - History
  - Present
  - Future
Caltrans Mission

- Provide a safe, sustainable, integrated and efficient (multi-modal) transportation system to enhance California’s economy and livability.
  - Caltrans maintains 265 State highways with 15,104 centerline miles (51,326 lane miles), over 32.5M registered vehicles and 24.6M licensed drivers who traveled >178B miles!
  - Caltrans owns nearly 120 PAX cars & locomotives and partners with AMTRAK to provide rail service to 5.3M PAX/year covering >467.2M mi/year over nearly 1000 mi. of track
  - CA has 246 public-use airports, nearly 30,000 certificated aircraft and 61,100 FAA certified pilots.  28 Commercial Service airports provided transportation to 188.0M PAX
Division of Aeronautics Mission

- Foster and **promote safety** in aeronautics
- Foster the development California’s air transportation system of **244 public-use airports**
- **Encourage** the development of private flying and the general **use of air transportation**
- Effect uniformity of the **laws and regulations** relating to aeronautics consistent with federal aeronautics laws and regulations
- Introduce **context-sensitive, sustainable solutions** to incompatible land use development projects near airports
Division of Aeronautics Offices

Division of Aeronautics – Three Offices and Four Specialty Areas:

- Office of Airports – Aviation Safety
- Office of Aviation System Planning – Compatible Land Use Planning
- Office of Technical Services & Programs – Airport Civil Engineers
- Other Specialty Areas:
  - Funding for Grants & Loans
  - Aviation Noise
  - Environmental Review
  - Track Aviation Related Legislation
Division of Aeronautics Aviation Partners

State:
- Department of Education (DOE)
- Department of Fish and Game (DF&G)
- California Energy Commission (CEC)
- Governor’s Office of Planning and Research (OPR)
- Governor’s Office of Emergency Services (OES)

Federal:
- Federal Aviation Administration (FAA)
- U.S. Department of Defense (DOD)
- U.S. Department of Agriculture (USDA) – Wildlife Services
- U.S. Department of Transportation (USDOT), Transportation Research Board (TRB) – Airport Cooperative Research Program (ACRP)

Non-Government Aviation Organizations:
- National Association of State Aviation Officials (NASAO)
- National Air Transportation Association (NATA)
- National Business Aircraft Association (NBAA)
- Airplane Owners & Pilots Association (AOPA)
- Association of California Airports (ACA)
- California Airports Council (CAC)
- California Pilots Association (CPA)
- Various universities and other stakeholders
Why Aviation is Important to California?

Aviation is vital for California!

- Provides for commerce centers that are vital for the movement of goods and people
- Contributes nearly 9% of California’s employment and output – direct and indirect spending:
  - Contribution to the U.S. Gross Domestic Product: $154.7 billion (4.8%)
  - Contribution to the U.S. employment: 1.1 million jobs (5.5%)
  - 59,841 active licensed pilot community (11% of U.S. total)
  - 29,211 registered aircraft (10% of U.S. total)
Why Aviation is Important to California?

- Airports facilitate international and domestic trade
- They are necessary for “just-in-time” production and delivery
- Each airport is an essential component of the State’s emergency response and disaster recovery operations
- Aviation provides convenient and affordable air travel for tourists, as well as access for companies to conduct business in your local community
- Emerging industry of UAS manufacturing and operations presents economic opportunities
Caltrans UAS Activities

- **History**
  - Caltrans Bridge Inspection Aerial Robot, Contract number UCD02-02371, Final Report *Prepared By*: Advanced Highway Maintenance and Construction Program (AHMCT) University of California at Davis, October 2008
    
  - Caltrans Division of Research, Innovation and System Information, Preliminary Investigation: The Use of Unmanned Aerial Systems for Steep Terrain Investigations *Requested by* Caltrans Division of Engineering Services, Geotechnical Services, August, 2014
  - Division staff attended UAS flight demonstration meeting sponsored by consultants to the California Film Commission in Los Angeles, February 2015
Caltrans UAS Activities

Present

➢ Received numerous inquiries from various Districts, Divisions, and Offices to operate UAS to improve safety, save money and enhance efficiency.

➢ Drafted internal document to seek formal Caltrans approval to conduct UAS operations in 2015.

➢ Preparing responses to Caltrans Innovation Website soliciting ideas to operate more efficiently and cost effectively.

   ➢ Evaluating suggestion to operate UAS in confined areas to enhance worker safety. If the Evaluation Team decides to move the idea forward, acquisition could occur in 3-6 months.

➢ Recently obtained legal declaration to formally submit application to the FAA for a Certificate of Authorization (COA) to conduct UAS operations.

Caltrans UAS Activities

- **Future**
  - Evaluate more proposals and determine appropriate model and capabilities
  - Determine if UAS operations will be in confined spaces or outdoors
  - If outdoors, determine if contracting out or internal UAS operations are more suitable

- **Internal UAS Operations**
  - Determine need and associated UAS capabilities and performance requirements
  - Obtain COA and/or 333 Exemption (if required) to commence UAS operations
  - Acquire UAS to conduct Department business activities

- **Contract for UAS Services**
  - Determine need and associated UAS capabilities and performance requirements
  - Advertise and award contract to commence UAS operations to support Department business activities
  - Ensure Contractor has obtained COA and/or 333 Exemption to commence UAS operations
Caltrans UAS Proposed Operations

- Landslide and other steep terrain investigations
- Vegetation and soil investigations
- Disaster response
- Bridge inspections
- Topographic surveys
- Roadside and roadway inspections
- Other State agency investigations
- Confined area inspections
Your CA aviation resources are only a click away!

Visit the Division of Aeronautics web site to learn more.

www.dot.ca.gov/aeronautics