# Technology & Development Status Report
## Aviation Program
## FY 2009

**Date Last Edited:** 11-8-2005

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| **PROJECT:** | **Technical Services, Aviation** | **CENTER:** | **SDTDC** |
| **Number:** | TE01P12 | **PROGRAM LEADER:** | Carl Bambarger |
| **SPONSOR:** | WO-F&AM | **Project Leader:** | Carl Bambarger |
| **Proposer:** | | | |

## *PROJECT OBJECTIVES*

This project is to provide continuing technical support to aviation staff members in the Washington Office (WO), Regional Aviation Specialists, and field line and staff officers, who require the specialized skills and services available from this Center. This is achieved through continuing coordination and liaison between Center personnel and Washington Office staff, both Fire and Aviation Management (F&AM) and Engineering, to ensure coordinated attack on specific technical problems, and to ensure maximum benefit from these activities.

Through this project, the Center provides continuity of expertise and support in such areas as helicopter and aircraft performance, accessories and specifications, and air and ground support equipment. Activities are also provided for continued support and implementation of previously completed aviation projects, as well as continued technical awareness of developments in aviation which could affect the Forest Service flying mission.

The project provides for continued Service-wide Supplemental Type Certificate (STC) and information resource coordination; participation in selected National Boards, workshops, and training sessions; consultation to Interagency Air Tanker Board (IAB) and National and Regional Helicopter specialists; liaison with military, professional societies, academic institutions, and private flight laboratories; examination of new and promising technologies for potential implementation in the aviation program; and continued training and increased technical capabilities of the SDTDC staff.

**Changes to objectives:**

## *SIGNIFICANT ACCOMPLISHMENTS*

- Completed the Wheel Loading of Airtanker Investigation. This report examines the various methods used within the FAA to measure wheel loading for compatibility with airport runways and taxiways. The report also examines the current Forest Service method for determining airtanker wheel loading. The report contains the equivalent measure for the airtanker fleet, and makes recommendation regarding the method for use within the Forest Service for the future.
- The Center investigated the possibility of using LIDAR (laser RADAR) for measuring the patterns made by airtankers. The DOW (Doppler Radar On Wheels) and 2-dimensional video disdrometers were acquired to collect data during a series of drop test that occurred in the Spring of 2003. A very large amount of data was collected and the center has acquired data analysis tools for the radar data for data reduction in FY04. The video disdrometer is a device that optically views the droplets of the retardant drop as they pass through the test area. The electronics converts the optical signals into measurements of the size and shape of the droplet, and the velocity. This data is used to interpret the radar data. Radar data returns a density measurement. To equate this density to a ground

coverage level requires the data from the disdrometer, which provides an exact volume deposit.

- The Center supported Region 2 with a business analysis of the Rocky Mountain Coordination Group. The analysis studied the workload and organization structure of the member organizations (fire fighting cooperators). The analysis also included a gap analysis and developed an array of alternatives to correct the operations of the group.
- The Center supported the WO on the Large Incident Strategic Decision and Assessment Oversight Review for the Fawn Peak Complex Fire and the Northern Rockies Geographic Area Fires. This support also resulted in creation of a draft Consolidation of Costs Containment Reviews from the Large Incident Reviews conducted during the FY03 fire season.
- San Dimas is supporting NIFC with an update of the CHEETAH fire occurrence analysis tool. The update is anticipated to be completed in the second quarter of FY04. The new program will allow for analysis of fire history data in geographic relation instead of the regional boundaries. Enhancements to the CHEETAH tool are also being completed.

***Output:***

**Planned:** As needed throughout the year.

**Actual:**