



# Technology & Development Status Report

## Aviation Program

### FY 2001



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**PROJECT:** Helicopter Safety Links    **CENTER:** SDTDC  
**Number:** 9E91P12    **PROGRAM LEADER:** Carl Bambarger  
**SPONSOR:** WO-F&AM    **Project Leader:** Carl Bambarger  
**Proposer:** Jon Rollens, WO-NIFC

### PROJECT OBJECTIVES

Helicopters provide significant support in the suppression of wildland fires. The aircraft are used to transport personnel and cargo, as well as drop fire suppressant on the fire from either fixed tanks or a bucket. In recent years, the Forest Service, as the employer of contracted helicopters, is finding that the available pool of experienced pilots is shrinking. Also, pilot experience is suspected as a cause for many helicopter incidents. Therefore, the aviation community is seeking ways to improve flying safety.

This project will examine the feasibility, develop working prototypes, and establish supplier(s) of a device which will improve the safety of long line work in helicopter flying. Long line work for helicopters puts an external load, cargo or equipment, slung beneath the helicopter. The load is attached to the helicopter's belly hook with a cable which can be up to 150 feet long. When flying with external loads, the hazards for the helicopter are: catching the external load or suspending cables on wires, towers, snags, poles, or any vertically standing objects while flying low to the ground; and snagging the load on foliage while lifting or delivering a load to the ground. Once the load or suspending cables catch any object, the helicopter is tethered to it. This results in rapidly changing flight dynamics that the pilot must recognize and take corrective action, or risk an accident with the aircraft.

The device being examined here is a safety breaking link that would be placed between the helicopter belly hook and the slung load. The device would sense an overload condition, and at a predetermined value break away, allowing the aircraft to fly away from the snagged load. Operational needs will be examined to determine level of the required pilot interaction with the device.

**Changes to objectives:**

### SIGNIFICANT ACCOMPLISHMENTS

- All investigation in to the development and operation is accomplished. The result indicates that completion of development and fielding of a device of this type is not acceptable for use in Forest Service helicopter operations. The summary report detailing the investigation and conclusion is to be completed in FY01.

### Output:

**Planned:** 11/1998 Develop field test equipment.  
10/1999 Complete flight environment field testing.  
9/2000 Complete project report

**Actual:**