

General Aviation

Requirements

Requirement ID: 632
Requirement

Status Category: Completed

Sponsor Organization: AFS

Sponsor POC: Anne Graham

Keywords: Decision Making, Errors, General Aviation Pilots (GA), Performance (meas/imprv), Procedures, Training-Other

Title: Reduction of Weather-Related and Maneuvering Flight GA Accidents

Research Statement:

Weather related accidents and incidents still remains one of the major causes of general aviation accidents. This research program continues to address countermeasures and advances in training, technologies, and regulations to significantly reduce this GA issue.

Background:

Weather and maneuvering flight remain the two largest single factors associated with fatal GA accidents. Typically, each of these factors accounts for about one-quarter of the approximately 400 fatal GA accidents each year. The importance of weather as a causal factor in GA accidents is reflected in its place on the Administrator's Safer Skies Agenda for General Aviation. Also included in the Safer Skies Agenda is Aeronautical Decision Making which is a component in both weather and maneuvering flight accidents. Recently, a Joint Safety Analysis Team addressed the problem of weather-related accidents and produced an extensive analysis of the problems and potential solutions. The proposed solutions involve a mix of aircraft and air traffic systems, procedural changes, and human factors interventions and training. However, to successfully accomplish these solutions and to ensure that they truly have an impact on the safety of general aviation, a research program that address a broad range of human factors issues is required. Although the fact that pilots sometimes venture into meteorological conditions beyond their capacity is indisputable based upon the accident statistics, the reasons for their doing so are far from clear. Anecdotal attributions of causes such as "get-home-it is" do not provide sufficient basis for the formulation of an effective intervention program. In the same way, assuming that pilots dismiss the often-heard phrase "VFR not recommended" simply because it is often-heard, is not a sufficient

explanation for pilots' apparent disregard of adverse weather information. To date, a similar depth of analysis has not been performed of maneuvering flight accidents, although they were addressed to a limited degree by the Joint Safety Analysis Team which investigated Controlled Flight Into Terrain (CFIT). The Flight Standards Service requires that a program of research, engineering, and development be established that will:

- a. Identify the human factors associated with maneuvering flight accidents and flight into instrument meteorological conditions by pilots unprepared for such conditions.
- b. Develop interventions that will address the human factors identified above so as to reduce the frequency of weather-related and maneuvering flight GA accidents.
- c. Develop and implement techniques to validate proposed interventions so as to ensure their acceptance, utilization, and effectiveness in the target population.

Output:

The eventual outcomes of the research program include: enhanced understanding of the nature and characteristics of decision making in cross-country VFR flight; techniques for enhancing decision making techniques (e.g., checklists, cockpit reminders etc.); techniques for enhancing the training of cross-country VFR decision making (e.g., manuals, video tapes, CDROM interactive programs, etc.); articles for pilot magazines, technical reports, conference presentations and articles for scholarly publication in peer-reviewed journals.

Regulatory Link:

- a. AOA (FAA) Strategic Plan (1998-2003) – Mission Goal: Safety. By 2007, reduce U.S. aviation fatal accident rates by 80% from 1996 levels (pg. 13). Focus Area: Accident Prevention. General Aviation Initiative addresses CFIT, weather, runway incursions, loss of control, and decisionmaking. (pg. 14)
- b. FAA FY2000 Performance Plan -- Reduce the General Aviation Fatal Accident Rate (pg. 16)
- c. AVR Performance Plan -- Goal B-1, reduce fatal aviation accident rate attributed to human error.