Human Factors

research and technology division

Training to Improve Safety

Objective

To provide more powerful methods to train airline and private pilots in planning, decision making, situation awareness, communication, management of concurrent tasks, meeting the challenges of weather, and use of automation in both normal and abnormal situations.

Approach

This project examines the cognitive processes involved in performing cockpit tasks. These tasks are as diverse as planning and managing concurrent activities, identifying the root causes of error, and designing strategies to reduce vulnerability to error and help crews manage challenging weather conditions and equipment failures. The research teams combine diverse approaches such as analysis of accident and incident reports, elicitation of knowledge and judgment from expert pilots, realistic flight simulations, and well-controlled laboratory studies. Scientific findings are implemented by airlines in strategies and guidelines for improving training.

Impact

Training is the primary tool for reducing crew error and for enhancing crew skills in managing challenging situations encountered in line operations. Improvements in training effectiveness translate directly into safer operations.

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