

Redesign for Sudden Autopilot Disconnection Needed, Say Flight Safety Experts

Human Factors and Ergonomics



Flight safety experts studying recent high-profile plane crashes found sudden autopilot disconnection to be a design flaw that creates unnecessary emergencies by surprising pilots during critical, high-workload episodes.

“The sudden disengagement of autopilot is analogous to a pilot suddenly throwing up his or her hands and blurting to the copilot, ‘Your Plane!’” says Eric E. Geiselman, lead author of a recently published two-article [Ergonomics in Design](#) [1] series, “Flight Deck Automation: Invaluable Collaborator or Insidious Enabler” (July issue) and “A Call for Context-Aware Logic to Improve Safety” (October issue).

Eric E. Geiselman, along with coauthors Christopher M. Johnson, David R. Buck, and Timothy Patrick, have combined expertise as pilots, crew resource management instructors, and human factors researchers. They studied the 2009 Colgan Air crash in Buffalo, New York, and the 2009 Air France crash off the coast of Brazil with a focus on how humans and machines can best communicate on the flight deck.

The authors recommend that autopilot systems transfer controls following the same protocols crew members use – with acknowledgment by the receiving pilot that he or she has assumed control. FAA regulations require a visual and auditory warning to occur following autopilot shutoff, but Geiselman et al. emphasize that such warning should occur before – not after – autopilot is disengaged.

Geiselman et al. report on many other design-level safety issues in these articles and offer prototypes featuring solutions that can be affordably implemented with available technology. They believe better design of automation technology on planes can prevent future accidents and that more pilot training shouldn’t be the only solution pursued by the industry.

For more information visit <https://www.hfes.org> [2].

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