

How prepared is your pilot to deal with an emergency?

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Pilots receive extensive training on effectively handling emergency situations that may arise in the cockpit. However, during several recent highly-publicized airline incidents, the pilots neglected to apply the skills they learned in training, resulting in fatal crashes. Were these accidents simply rare exceptions? A study published in *Human Factors* investigates whether current pilot emergency training practices are effective in mitigating airline disasters.

In "The Effectiveness of Airline Pilot Training for Abnormal Events," Steve Casner, a research psychologist at NASA's Ames Research Center, along with airline pilot collaborators Richard Geven and Kent Williams, tested [pilots'](#) emergency preparedness in a high-fidelity Boeing 747 simulator. The research trio presented eighteen active 747 pilots with in-flight emergencies that matched emergencies practiced during training. The test revealed that all eighteen pilots performed impeccably, providing the correct response for each emergency.

Still puzzled by the recent accidents, the researchers decided to try a different tactic. They presented pilots with the same emergencies as those used in the first study, but instead incorporated situations that differed from those typically used in training. Results indicated that when the emergencies were presented in ways that pilots had not yet encountered, they frequently struggled or made critical errors.

"Emergency drills tend to be predictable exercises in which people know exactly what's coming and when," said Casner. "But when confronted

with the blooming, buzzing confusion of a real emergency, people often seem lost."

Geven points out that mundane drills typically used in training overlook a crucial step: allowing pilots to practice recognizing an emergency in the many forms it can take. "People don't just have these recognition skills," said Geven. "They need to be learned."

Williams noted how pilots in the study sometimes became discombobulated. "It's hard to remain calm, centered, and focused in an [emergency](#)," he said. "Predictable [training](#) routines take away our opportunity to practice that."

The bottom line of the study: "Don't just practice emergencies in one way," said Casner. "Change it up and sometimes take them by surprise."

Provided by Human Factors and Ergonomics Society

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