

## When the Cockpit Fills With Smoke

**A simple gadget solves the problem, but the airline industry can't agree on whether it's necessary**

On Nov. 28, 1987, South African Airways pilot D.J. Uys was making his last flight before he settled down for retirement. The trip was long- 5,300 miles from Taiwan to Mauritius, off the southern coast of Africa. With just 125 miles to go, Uys radioed ahead that his Boeing 747 was in trouble. "Smoke is entering the cockpit," he told the tower. But that was the last anyone heard from him. The plane, with 160 passengers and crew, plunged into the Indian Ocean. There were no survivors.

To this day little is known about what caused the accident aboard the SAA flight. But Uys's last transmission suggests that poor visibility may have played a role. The problem of smoke in the cockpit is common. According to Federal Aviation Administration (FAA) records, there are on average about 100 such incidents each year in the United States, resulting in unscheduled landings roughly once a week. Dense smoke in the cockpit can turn an already complicated situation into a disaster, making it impossible for pilots to see out the window or monitor their instruments. But a new device may prevent such accidents in the future, giving pilots a clear line of sight through even the darkest haze.

The gadget, called the Emergency Visual Assurance System, or EVAS, is little more than a clear plastic bubble that inflates to fit snugly over the window and instruments. When a pilot pulls a tab, the bubble fills like an air bag in a car, only more slowly. A filter in the battery-powered unit ensures that air inside the bubble remains clear. All a pilot must do to see out the window or look at his instruments is press his protective antismoke goggles to the plastic. "It's so simple," says Robert Yonover, the director of research and development for Vision safe, the company that makes EGVAS. "It's a wonder someone didn't come up with it sooner."

The batteries will keep the transparent bubble inflated for four hours, more than enough time for pilots to make an emergency landing. "We tested it with smoke so thick you can't see the person next to you," says Ken Burton, an emergency-training expert and president of Stark Survival Co. "But you can see instruments and the ground to make a safe landing."

In current smoke emergencies, a pilot just dons goggles and an oxygen mask and turns up the airplane's ventilation system to full blast. That pumps fresh air into the cockpit and pushes the smoke out of the plane. "For most fire and smoke emergencies, current methods are adequate," says Hugh Waterman, a consulting engineer who has worked with Vision Safe. But EVAS is meant to help pilots when thick smoke continues to pour into the cockpit and cannot be cleared fast enough.

EVAS would seem to be a ready solution to a dangerous problem, but it isn't selling briskly. The company has sold fewer than a dozen units in two years. Times are tough for the airline industry, and airlines are reluctant to spend the roughly \$20,000 per plane it would cost to install twin units for the pilot and copilot and to train personnel.

An even greater impediment may be that the FAA balks at the idea of requiring EVAS units, insisting that the problem is overstated. In a report to congress last year, the FAA maintained that in the past 20 years, there have been two accidents involving deaths that were blamed on poor visibility caused by smoke. But Vision safe president Bert Werjefelt argues that there have been at least 10 fatal accidents in which smoke in the cockpit was a suspected cause. "The FAA is just waiting for another accident to happen before they take any action," says Werjefelt. Many industry professionals agree that current safety measures don't go far enough.

In a letter last December, the Air Line Pilots Association asked the FAA to boost requirements on smoke safety equipment- in effect requiring equipment to give pilots visibility no matter how dense the smoke.

Last month Sen. Daniel Inouye of Hawaii jumped into the squabble, threatening to introduce a bill requiring measures to prevent smoke-related accidents unless the FAA takes action on its own. But the agency isn't planning any changes, says the FAA's Tom McSweeney: "If the senator wants to do something about it, that's up to him."

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