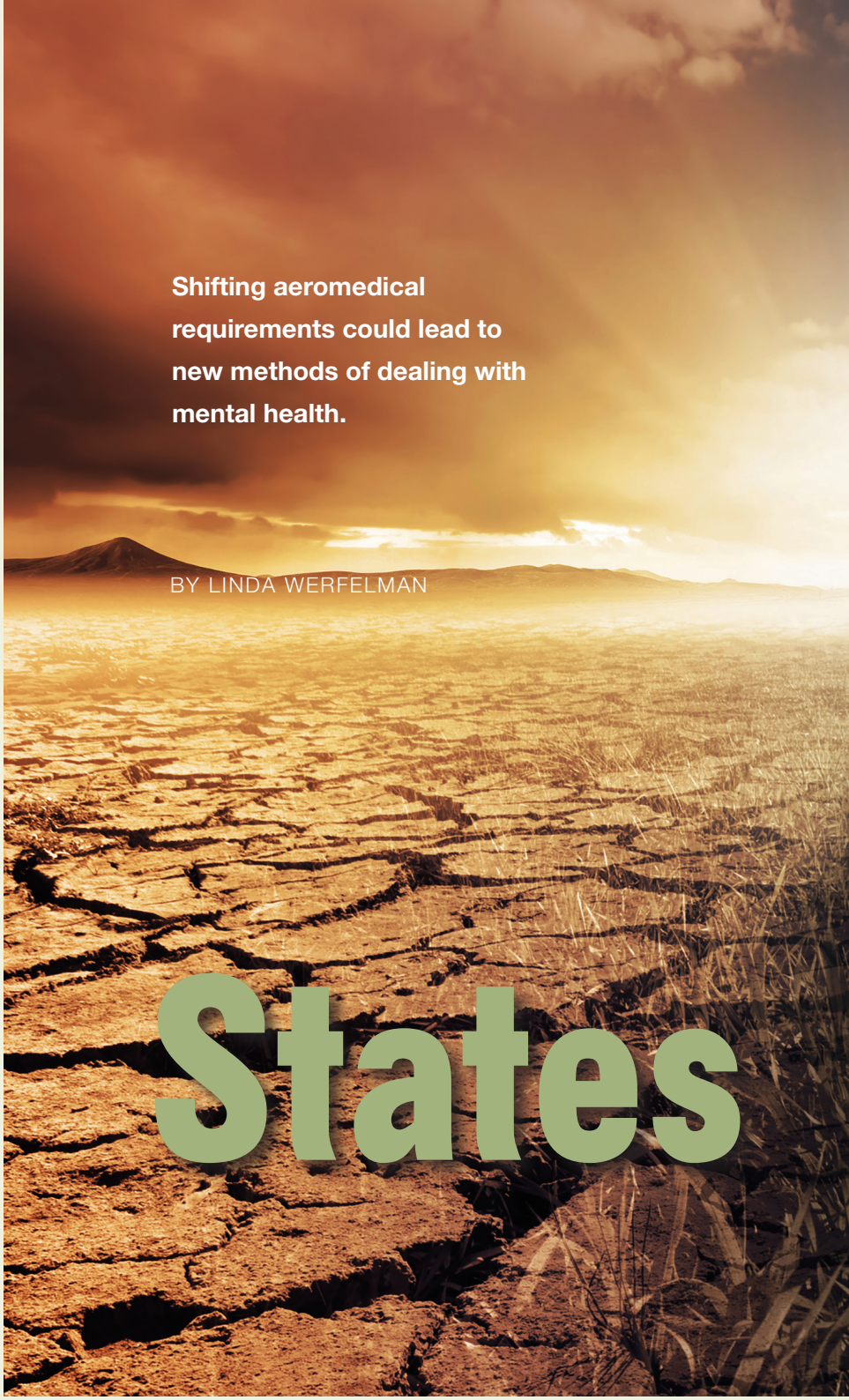


States

Shifting aeromedical requirements could lead to new methods of dealing with mental health.

BY LINDA WERFELMAN

Aeromedical authorities are mulling changes in their requirements for routine aviation medical examinations that they say could ultimately focus new attention on pilots' mental health.

The International Civil Aviation Organization (ICAO) is considering a move to upgrade into a requirement an existing recommendation that national aviation authorities implement a health education system for holders of pilot licenses.[1] If approved by ICAO's Air Navigation Commission, the requirement would, by late 2016, become part of a larger program to address pilots' mental health, Anthony Evans, chief of ICAO's Aviation Medicine Section, says.

"We need an industry-wide (regulators, airlines, pilot associations) approach to the issue," Evans said, adding that the approach must include "better education associated with a system to support those who have a mental health problem."

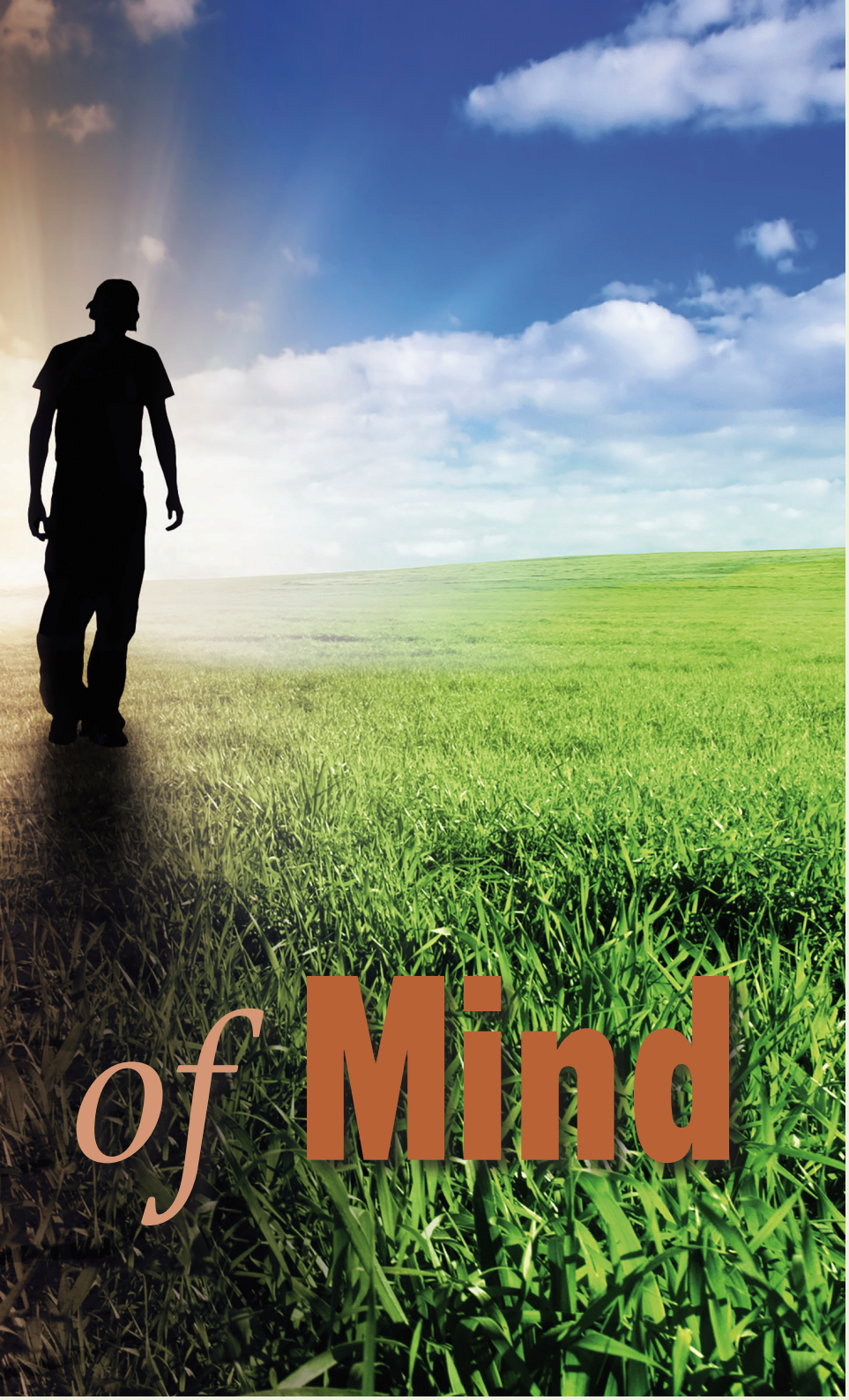
The proposed requirement would direct pilot licensing authorities in ICAO member states to "implement appropriate aviation-related health education for licence holders subject to a medical assessment to reduce future medical risks to flight safety."

Evans made the remarks in the aftermath of the March 24 crash of a Germanwings Airbus A320 in the French Alps. All 150 people in the airplane were killed, and, although the French Bureau d'Enquêtes et d'Analyses has not completed its investigation, preliminary reports indicate that the first officer locked the captain out of the cockpit and set the A320 on a collision course with the ground. News reports have quoted German authorities as saying that the first officer had been treated for depression for a lengthy period before receiving his pilot license and that he had shown suicidal tendencies.[2]

Mental health issues have figured only rarely in commercial transport aviation accidents and incidents, and in some cases, accident investigators have been unable to agree on the role played by a pilot's mental state (see "Accidents Linked to Pilot Mental Health," p. 14). Nevertheless, aeromedical authorities have revised guidelines in recent years in hopes of improving their ability to identify pilots with problems.

'Mismatch'

ICAO's proposal has been under review for months, long before the Germanwings crash, and as long ago as 2012, the ICAO *Manual of Civil Aviation Medicine* had noted the need to pay more attention to mental health issues.



# of Mind

© BenGoode | istockphoto

"Particularly in the younger license holder," the *Manual* says, "there is an apparent mismatch between the likelihood of the existence of particular pathologies of flight safety importance (mainly mental and behavioral problems) and the tools being used to detect them (the traditional medical examination)."

The Aerospace Medical Association (AsMA) has voiced similar concerns, and in comments posted on the organization's website after the Germanwings crash, AsMA President Philip J. Scarpa Jr. said that "there is room for improvement in the airline industry for mental health screening in pilots."

He added, "Most airlines do not perform any periodic mental health assessments after an initial screening during the hiring process."

Conditions that arise suddenly are difficult to predict "and do not justify routine testing," Scarpa said, but depression, anxiety, mania and other conditions can be diagnosed more easily "and are so worth screening for." He noted that his organization has endorsed "effective, minimally intrusive, easy-to-use tests" during a routine aeromedical exam.

Along with screening, the industry also should try to educate pilots and their families on how to identify and report signs of mental illness, he said.

"Also, providing 'safe zones' for pilots to report any issues is important to encourage reporting," Scarpa said. "These safe zones, such as one's pilots union, provide a sense of protection from retribution and social stigma for the pilot and have been very successful in receiving reports and providing intervention that otherwise would have been missed."

AsMA's mental health recommendations — developed after a March 27, 2012, incident in which a JetBlue captain turned off the radios on his Airbus A320, told his first officer that they would not be going to their planned destination and began yelling about Jesus and terrorists[4] — said that use of safe zones has helped increase rates of reporting of mental health issues and of providing assistance.

The recommendations call for tests that Scarpa said could easily be used by aeromedical examiners during pilots' existing periodic aeromedical exams.

AsMA said that it "does not recommend an extensive psychiatric evaluation as part of the routine pilot aeromedical assessment" but rather that "greater attention be given to mental health issues by aeromedical examiners and by the aviation community in general, especially to

Accidents Linked to Pilot Mental Health

Date	Location	Aircraft Type	Aircraft Damage	Injuries
Mar. 24, 2015	Barcelonette, France	Airbus A320	Destroyed	150 fatal
Preliminary information indicates that the Germanwings first officer locked the captain out of the cockpit and "used the autopilot to put the aeroplane into a descent towards an altitude of 100 ft, then, … modified the autopilot setting to increase the speed."				
Nov. 29, 2013	Bwabwata National Park, Namibia	Embraer ERJ-190	Destroyed	33 fatal
Preliminary information indicates that while he was alone in the cockpit, the LAM captain re-programmed the altitude preselector to a lower altitude and manually reselected the airspeed, which was near maximum operating speed until the end of the flight. Sounds of pounding on the cockpit door were heard on the cockpit voice recorder.				
Oct. 31, 1999	Atlantic Ocean	Boeing 767	Destroyed	217 fatal
The EgyptAir 767 crashed in the Atlantic Ocean shortly after takeoff from New York. U.S. investigators said the relief first officer, alone in the cockpit, shut off the autopilot and the engines and pushed the flight controls forward. The captain returned to the cockpit but was unable to recover the airplane. Egyptian authorities disputed the conclusion.				
Oct. 11, 1999	Gaborone, Botswana	ATR-42	Destroyed	1 fatal
An Air Botswana captain who was grounded for medical reasons took off in one of his airline's ATR-42s, demanding to talk to airline officials and the president of Botswana. He told air traffic control that he planned to crash the airplane, which later struck two ATR-42s parked on the apron.				
Dec. 19, 1997	Near Palembang, Indonesia	Boeing 737	Destroyed	104 fatal
Both flight recorders stopped functioning before the SilkAir 737 began a rapid descent, broke up and crashed into the Musi River delta. Indonesian authorities could not explain the crash, but U.S. investigators said it appeared the cockpit voice recorder was intentionally disabled and that the descent resulted from manual nose-down flight control inputs.				
Aug. 21, 1994	Near Tizounine, Morocco	ATR 42	Destroyed	44 fatal
The Royal Air Maroc airplane crashed after takeoff from Agadir. Accident investigators said the pilot had disconnected the autopilot and put the airplane into a steep dive. The pilots' union challenged those findings.				
Feb. 9, 1982	Tokyo	McDonnell Douglas DC-8	Destroyed	24 fatal
As the Japan Air Lines DC-8 descended through 164 ft on the approach, the captain shut off the autopilot, pushed the controls forward and pulled the throttle levers to idle. The first officer struggled to take control of the airplane, but it crashed short of the runway in Tokyo Bay. The captain had recently returned to duty after a year off because of "a psychosomatic disorder."				
Sept. 26, 1976	Novosibirsk, Russia	Antonov 2	Destroyed	12 fatal
A pilot stole an Aeroflot An-2 and flew it into buildings on the street where his ex-wife lived. The pilot and 11 people on the ground (not including the ex-wife) were killed.				

Source: Aviation Safety Network

Table 2

the more common and detectable mental health conditions and life stressors that can affect pilots and flight performance. We encourage this through increased education and global recognition of the importance of mental health in aviation safety."[5]

The guidelines also suggested that the examining physician could question the pilot, "in a way that helps promote a nonthreatening environment and builds rapport with the pilot," about work, home and family. The pilot's responses could "reveal situations and stressors faced by the applicant which could be ameliorated," the guidelines said.

'Very Layered'

AsMA's call for "quick and effective" methods of spotting mental health problems does not go far enough, said Ron Frey, an organizational psychologist and senior partner with the Human Factor and Incident Investigation Institute in Ottawa, Canada. He said that ICAO and national regulatory authorities need "a more modernized and complete" method of evaluating pilots' mental health.

"The problem that the aviation industry has is complicated and very layered," said Frey, who has administered workplace psychological evaluations in several industries, including

aviation. He added that full-scale psychological testing has been a best practice for years in many industries and that a mental health testing component should be added to routine aeromedical exams, which traditionally have dealt primarily with physical health.

If administered and reviewed properly, he said, the tests can help identify mental health issues, even if the test-takers try to hide their problems. Underreporting of workplace stress, fatigue and symptoms of depression and anxiety is "endemic in the industry," Frey said. "There are many defenses that aviation companies put in place …. But unfortunately, there are still too many holes. … It's easier in this industry to address engineering deficiencies, structural deficiencies … and much more difficult to address the liveware component."

The European Federation of Psychologists' Associations (EFPA) and the European Association for Aviation Psychology (EAAP), in a joint statement, endorsed not only a psychological assessment before beginning flight training and before starting work at an airline but also "recurrent evaluation of pilots' mental health, both in the context of the periodic medical examination … and of well-accepted airline policies and procedures to ensure fitness to fly."[6]

Nevertheless, the organizations added, the existing psychological assessments and human factors training are "among the elements that make aviation the safest form of transport around the world" and contribute — along with technical advances and operational requirements — to making events such as the Germanwings accident "highly exceptional."

Underreporting of Symptoms

Frey said that the underreporting by pilots of symptoms of depression and anxiety, and potentially related problems, has made it difficult to estimate the extent of these mental health issues in the aviation industry.

He cited recent studies that estimate 10 to 15 percent of the general population experience depression sometime in their lives and that the risk of suicide among depressed patients is about 20 times greater than in the general population.[7]

Data are not available to determine the extent of depression among pilots, Frey said, adding that when pilots are questioned about mental health issues, they tend to "underreport their weaknesses and over-report their strengths."

Nevertheless, he said, "you can extrapolate that if it's that bad in general society, … it could be just as bad in the aviation industry."

Notes

1. ICAO. Working Paper AN-WP/8927, "Preliminary Review of Proposed Amendments to Annex 1 Arising From the MPSG Relating to Health Education and the Medical Assessment Process, and Safety Management Principles as Applied to the Medical Assessment Process." March 17, 2015.
2. Kulish, Nicholas; Clark, Nicola. "Germanwings Crash Exposes History of Denial on Risk of Pilot Suicide." *New York Times*. April 19, 2015.
3. Aerospace Medical Association (AsMA). *Pilot Mental Health.* <asma.org/publications/pilot-mental-health>.
4. U.S. Federal Bureau of Investigation. *JetBlue Pilot Charged With Interference With a Flight Crew*. March 28, 2012. No one was injured in the incident, which ended when the first officer diverted the New York to Las Vegas flight to land in Amarillo, Texas. The Associated Press reported on March 27, 2015, that the pilot — who was criminally charged in connection with the incident but found not guilty by reason of insanity — was suing the airline for failing to recognize his illness.
5. AsMA Ad Hoc Working Group on Pilot Mental Health. "Pilot Mental Health: Expert Working Group Recommendations." *Aviation, Space, and Environmental Medicine* Volume 83 (December 2012): 1184–1185.
6. EFPA; EAAP. *Press Release: European (Aviation) Psychologists and the Crash of Germanwings Flight 9525*. <www.efpa.eu/newsarchive>.
7. Lépine, Jean-Pierre; Briley, Mike. "The Increasing Burden of Depression." *Neuropsychiatric Disease and Treatment* Volume 7 (Supplement 1). Published online May 31, 2011. Available at <www.ncbi.nlm.nih.gov/pmc/articles/PMC3131101/>.