



NAVAIR pilots learn to take a breath



Marine Corps Maj. Kevin Ryan undergoes oxygen deprivation training while operating Naval Air Warfare Center Aircraft Division's Manned Flight Simulator at Patuxent River Naval Air Station. (U.S. Navy Photo)

New simulator training mimics oxygen deprivation for F/A-18 naval aviators

NAVAL AIR SYSTEMS COMMAND, PATUXENT RIVER, Md. — It can strike without warning, robbing a pilot of the ability to think clearly or react as he or she flies through the air at supersonic speeds.

“I was gasping for air and got a little light headed,” said Navy Lt. Pat Bookey, a pilot assigned to [Air Test and Evaluation Squadron \(VX\) 23](#). “It was pretty eye-opening because my symptoms don’t really present themselves gradually and my blood oxygen level gets pretty low before I actually know it is happening. The symptoms hit me pretty hard.”

The culprit was hypoxia, more commonly known as oxygen deprivation, and symptom recognition is key to combating its disastrous effects, which can include a decrease in mental performance, delayed response time, diminished basic motor skills and loss of consciousness.

Bookey was one of several [F/A-18](#) pilots who recently participated in a training event on April 16 that combined NAVAIR’s Manned Flight Simulator (MFS) with a Reduced Oxygen



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Breathing Device (ROBD) simulator. The purpose was to show pilots what hypoxia really feels like in the cockpit during task-heavy exercises and to emphasize what life-saving steps they should take if it strikes, such as accessing the emergency oxygen supply and landing the aircraft.

“When a pilot’s workload is very high, the ability to identify hypoxia symptoms is reduced,” said Marine Corps Maj. Tobias van Esselstyn, VX-23 director of safety and standardization. “We combined the ROBD with a high fidelity [realistic] simulator, put F/A-18 pilots in their own environment, gave them a task that is very hard to do and got them hypoxic at the same time.”

With traditional hypoxia training, a pilot uses an ROBD while flying a simulator at a computer. While informative, this approach does not require the same workload experienced during flight and results in a higher awareness of symptoms such as light-headedness or reduced motor control. The new combined training demands much more of the pilot’s attention and delays the awareness of hypoxia symptoms, creating a more realistic environment.

Lt. Cmdr. Corey Little, an aeromedical safety officer for [Naval Test Wing Atlantic](#), oversaw the training and recorded each pilot’s specific symptoms.

“It is good to see based on body type, physical makeup and physical fitness levels how each individual responds to a decrement in oxygen,” Little said. “By doing the hypoxia training in conjunction with a very labor-intensive or task-intensive flight simulation, it allows them to get further into the hypoxia training and really feel the full effects of that lack of oxygen.”

Steve Naylor, the MFS F/A-18 simulation lead, said he was encouraged by the experiment’s results.

“The problem with hypoxia recognition is each person reacts differently to it,” Naylor said. “During the training, several pilots were surprised at what they felt in the simulator. At least one pilot assumed he would feel the way he did when he was hypoxic 10 years ago in a jet, and the way he felt then was not the way he felt now.”

Simulator training helps pilots learn what their personal hypoxia symptoms are and what actions to take to avoid dangerous mishaps.

“When you fly a single piloted aircraft, you are the only one who can help yourself out,” van Esselstyn said. “That’s why most of the time pilots work diligently to know all their procedures cold. It is easy to know what to do, but sometimes recognizing when to do it is the hardest part for us up there flying.”

For a video on this training please link to our YouTube channel:



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<http://youtu.be/uFx0D5PWGxl>