



# NTSB 2017-2018 MOST WANTED LIST OF TRANSPORTATION SAFETY IMPROVEMENTS

## Eliminate Distractions



AVIATION

MWL  
MOST WANTED LIST

**The increasing prevalence of PEDs has only expanded the potential ways a pilot can be distracted; however, the consequence remains the same—a loss of situational awareness with potentially catastrophic consequences.**

### What is the issue?

Aviation safety is predicated on pilots maintaining an accurate awareness of their operating environment. To do that effectively, pilots must focus their attention on operationally relevant actions and information, whether the airplane is moving on the ground or in the air. Pilots need to keep track of where they are, where they're going, and what they need to do, in addition to managing aircraft systems and being ready to address unforeseen circumstances that can disrupt even the most robust preflight planning. Many of these activities involve communicating and coordinating with others, including crewmembers, air traffic controllers, and dispatchers. In short, task-related distractions are an inherent part of aviation.

Procedures and training provide pilots with the strategies and skills to appropriately shift and direct their attention to operationally relevant information and to maintain flight safety. However, those procedures can be undermined when a pilot brings a self-imposed or internal distraction into the cockpit. Focusing attention on a personal portable electronic device (PED) or nonessential distraction can erode the margins of safety this industry has built up over years with procedures, equipment, and training.

Nonessential conversation was an early form of internally-generated (self) distraction in the cockpit, and accident history shows it can severely interfere with pilots' ability to complete tasks and maintain situational awareness. One tragic example is the 2006 wrong runway takeoff accident in Lexington, Kentucky, in which the crew's conversation during taxi contributed to their loss of positional awareness.

The increasing prevalence of PEDs has only expanded the potential ways a pilot can be distracted; however, the consequence remains the same—a loss of situational awareness with potentially catastrophic consequences. For example, in 2014, we investigated a general aviation accident in which the pilot was distracted by updating a Facebook post. In 2011, a helicopter air ambulance pilot's attention was distracted by texting, which contributed to a fatal fuel exhaustion crash. In 2009, Northwest Airlines (NWA) flight 188 failed to communicate with air traffic control for approximately 1 hour 17 minutes and flew past its landing point by 100 miles. We concluded that the NWA flight crew failed to monitor the airplane's radio, instruments, and flight progress after becoming distracted by conversations and activities unrelated to the flight.



NWA Flight 188, 2009

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## What can be done?

Because people have limited attention and many transportation tasks are multidimensional and complex, reducing the distractions that pilots and operators voluntarily bring into the task environment can maximize the attention resources. For safety critical operations, distraction must be managed—even engineered—to ensure safe operations.

Aviation has long recognized the need for “sterile cockpit” procedures that restrict activities and conversations to the task at hand. In 1981, the Federal Aviation Administration (FAA) introduced the “sterile cockpit rule” (Title 14 *Code of Federal Regulations* Part 121.542), which prohibits distracting personal activities during critical phases of flight, including all ground operations involving taxi, take-off, and landing, and flight operations below 10,000 feet (except cruise). This rule strictly prohibits the flight crew from engaging in specific distracting activities. We have also asked for a ban on PED use on the flight deck, and in 2014 the FAA issued its final rule on the Prohibition on Personal Use of Electronic Devices on the Flight Deck, publishing guidance encouraging the aviation industry to expand procedure manuals and training programs to include other personnel in the prohibition of PEDs in the operational environment.

This is a start, and flight operations conducted under Parts 135 and 91 would benefit from similar action. In the meantime, pilots and other aviation personnel (such as mechanics and ramp workers) can take action on their own to reduce or eliminate distractions that they bring into their task environment by establishing their own sterile cockpit procedures, keeping phones off and out of the task environment, and doing their best to focus on the task at hand until it is safely completed. ■



The NTSB Most Wanted List highlights safety issues identified from the NTSB’s accident investigations to increase awareness about the issues and promote recommended safety solutions.

The NTSB is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation – railroad, highway, marine and pipeline. The NTSB determines the probable cause of the accidents and issues safety recommendations aimed at preventing future accidents. In addition, the NTSB carries out special studies concerning transportation safety and coordinates the resources of the federal government and other organizations to provide assistance to victims and their family members impacted by major transportation disasters.

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### Related Accidents\*

Date	Location	Accident ID
October 21, 2009	Minneapolis, MN	DCA10IA001
August 26, 2011	Mosby, MO	CEN11FA599

\*For detailed accident reports visit [www.nts.gov](http://www.nts.gov)

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Critical changes needed to reduce transportation accidents and save lives.

