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Fact Sheet – Cell Phones, Wi-Fi and Portable Electronics on Airplanes

Immediate Release

November 10, 2009

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If you've flown with a commercial airline, you know the drill. Turn off all pagers, electronic games, MP3 and CD players, laptops and the like once the cabin door is closed, until the plane gets above 10,000 feet. No using cell phones at any time while the plane is in the air. But do you know the real reasons why you have to follow these rules?

It's a Safety Thing

There are still unknowns about the radio signals that portable electronic devices (PEDs) and cell phones give off. These signals, especially in large quantities and emitted over a long time, may unintentionally affect aircraft communications, navigation, flight control and electronic equipment.

Federal Aviation Administration regulations prohibit use of most portable electronic devices aboard aircraft, but they specifically exempt portable voice recorders, hearing aids, heart pacemakers and electric shavers because they don't give off signals that might interfere with aircraft systems.

The regulations also let airlines independently determine if passengers can use PEDs not specifically mentioned by the rules. An airline must show a device does not interfere with safe operation of the aircraft during all phases of flight. In its oversight capacity, the FAA ensures that the operator complies with regulations by reviewing the results of the carrier's tests and its analysis of pertinent data.

The FAA has issued guidance to airlines letting passengers turn on most PEDs after the plane reaches 10,000 feet. At a lower altitude, any potential interference could be more of a safety hazard as the cockpit crew focuses on critical arrival and departure duties.

Cell Phones: A Different Animal

Cell phones (and other intentional transmitters) differ from most PEDs in that they send out signals strong enough to be received at distances far away from the user.

Since 1991, the Federal Communications Commission (FCC) has banned the inflight use of 800 MHz cell phones because of potential interference with ground networks. This ban requires that in addition to the testing the FAA requires to show non-interference to the airplane systems, an airline would also need to apply for an exemption to the FCC rule before it could allow cell phone use inflight. The FCC proposed modifying this ban in 2004, but subsequently withdrew the proposal based on the comments it received.

Even if the FCC ever rescinds its ban, FAA regulations would still apply. Any installed equipment would be subject to FAA certification, just like any other piece of hardware. The air carrier would have to show that the use of a particular model phone won't interfere with the navigation and communications systems of the particular type of aircraft on which it will be used.

Today, airlines may let passengers use newer-model cell phones in what's called "airplane" mode, which essentially disables the transmission function so they can't make calls. This mode lets users do other things, such as play games, check an address or look at the phone's calendar. FAA guidance does let airlines allow cell phone calls once the plane has landed and is taxiing to the gate.

Gathering Data

From 2003 to 2006, the RTCA — an organization the FAA sometimes asks to help study technical matters that affect policy and regulatory decisions — looked at the issue of electromagnetic interference from intentionally transmitting PEDs, such as cell phones and WiFi transmitters in laptops. Air carriers collected data to support the RTCA's work.

The final RTCA report said there is insufficient information to support a wholesale change in policies that restrict use of PEDs. But the group did publish thoroughly detailed processes by which operators and manufacturers can assess the risk of PED interference with aircraft systems, and similarly detailed guidelines for certification of such products, if it is requested from the FAA.

WiFi in the Sky

Over the last couple of years, airlines have responded to travelers' requests for inflight Internet access by installing WiFi systems that passengers can access (for a fee) using their laptop computers, Blackberries and other devices with a WiFi chip.

For each model of aircraft a WiFi system is to be used on, a manufacturer must get FAA certification for the system, and the airline must get FAA operational approval. The approvals include testing to show the equipment performs its intended function and doesn't interfere with any aircraft systems during all phases of flight. Typically, airborne WiFi equipment mimics its earthbound counterparts: routers, ethernet cables, access ports and other communications hardware, all permanently installed in the airplane.

While passengers are welcome to access the web, U.S. airlines offering WiFi service block the use of inflight calling using Skype or similar applications. This is not an FAA restriction; they are simply responding to the overwhelming majority of their customers, who prefer silent communications to the public nature of Voice-over-Internet-Protocol (VoIP) calls.