

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
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Notice of Proposed Rulemaking)	
)	IB Docket No. 12-376
)	
Providing for the efficient licensing of 2-way in flight)	
broadband services, including Internet access)	
to passengers and flight crews aboard commercial)	
airlines and private aircraft.)	
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To: Office of the Secretary
Federal Communications Commission
Washington, DC 20554

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March 1, 2013

The purpose of this proposed rule is to facilitate the application process for providers of WIFI on planes. WIFI on planes provides passengers greater access to the internet and provides hours of in flight entertainment; telecom providers profit substantially from the access fees. But, where is the consideration of the health impacts for crew and passengers?

There is no requirement in this proposal that applicants provide testing showing the cumulative exposure levels crew and passengers will receive from the access points as well as the hundreds of laptops, smartphones, tablets, etc. used simultaneously within the metal enclosures of a plane for flights lasting as long as 5 hours or longer. And, there is no consideration given as to the health impacts for long term, occupational exposure for pilots and flight attendants. This is an unacceptable omission in this proposal; these health impacts must be considered!

In the entire 90 page proposal, there is only 1 short mention of the requirement to submit “a radio frequency hazard analysis....via calculation, simulation or field measurements.” (pg 83: 16.(b)(8)) And, this requirement only involves the exposure from the access point.

No one knows if the total microwave exposure during flights falls within the FCC guidelines as there is no required testing; there is an assumption that as long as the levels aren't high enough to “cook” tissues, there is no reason to be concerned. There is a mounting body of scientific evidence that the international standards upon which the FCC's guidelines are based are inadequate as they do not take into account the non-thermal biological effects.

Allowing WIFI on planes with no “pre-market” testing is an outrageous violation of the FCC's mandate to protect citizens from the known hazards of microwave radiation exposure. And, it is morally wrong.

The FCC's exposure limit that governs WIFI on planes is the 20 year old standard called out in 47 CFR 1.1310 of 1 mW/cm^2 for 30 minutes. This standard only takes into account the heating of tissue from a 30 minute acute exposure to very high levels of RF that might be experienced working on a powerful transmitter.

There are essentially no flights with WIFI lasting only 30 minutes. This alone renders the FCC exposure standard irrelevant. This standard is not applicable to general population exposure to WIFI and 2nd hand exposure received on planes. It also fails to consider the **biologically harmful, non-thermal health effects from RF which have been documented by hundreds of published studies. Many of these studies document biological effects at exposure levels thousands of times lower than the FCC limit.**

A published, peer-reviewed study from Japanese physicists, "**Passive Exposure to Mobile Phones: Enhancement of Intensity by Reflection**" (Hondou et al 2006) found that the microwave energy reflecting off the metal surfaces of elevators, planes, etc. can generate "hot spots" **that are intensified as much as 2000 times.**

No one knows the health impacts of sitting in a metal enclosure where the RF energy is intensified 2000 times in certain locations; many studies have shown impacts such as headaches, fatigue, lack of concentration, cardiac emergencies and even loss of consciousness at levels hundreds of times lower than the current FCC exposure guideline.

Is it possible the recent media reports of 2 pilots losing consciousness during flight is related to WIFI exposure? No one knows since the FCC does not monitor the exposure levels crew receive from WIFI.

The Japanese researchers in the above mentioned study stated that, "*Because the peak exposure level is crucial in considering...interference (in) airplanes, and biological effects on human beings, we also need to consider the possible peak exposure level, or 'hot spots', for the worst-case estimation.*"

Below is the paper's abstract:

"In a recent Letter [J. Phys. Soc. Jpn. 71(2002) 432], we reported a preliminary calculation and concluded that public exposure to mobile phones can be enhanced by microwave reflection in public spaces. In this paper, we confirm the significance of microwave reflection reported in our previous Letter by experimental and numerical studies. Furthermore, we show that "hot spots" often emerge in reflective areas, where the local exposure level is much higher than average. Such places include elevators, and we discuss other possible environments including trains, buses, cars, and airplanes. Our results indicate the risk of "passive exposure" to microwaves."

<http://www.cmpt.phys.tohoku.ac.jp/~hondou/JPSJ-75-084801.pdf>

The FCC has been negligent in its failure to call for a thorough review of the mounting scientific evidence that unequivocally shows biological effects from exposure to microwave radiation at levels hundreds and thousands of times lower than the current standards.

Crew members and passengers are being exposed, without their awareness or permission, to potentially harmful levels of microwave radiation – **a "substance" that has been classified by the World Health Organization as a possible human carcinogen, placed in the same health risk category as DDT and lead.**

Imagine the public outcry if passengers were unknowingly, and without permission, being sprayed with DDT for the duration of a 5 hour flight! And, if in the future, it is determined that exposure to microwave radiation at levels 500 or 1,000 times lower than your current standard DO cause DNA damage (as multiple studies have documented since 1995) and there are resulting serious health impacts – what will be YOUR responsibility in this potential public health crisis?

There have been hundreds of independent, published, peer-reviewed studies from all over the world showing biological effects such as DNA damage, disruption of the blood brain barrier, damage to sperm and reduced concentration at exposure levels 500 times lower than the FCC's 20 year old standard.

Especially concerning is the fact that children's developing brains and nervous systems are known to be more sensitive to the effects from microwave radiation exposure. There have been NO studies showing that WIFI exposure is safe, especially with respect to children; and the existing FCC exposure standard has been shown to be obsolete and inadequate to protect human health. And, yet, the FCC continues to permit and encourage faster and more widely-available wireless exposure throughout all of our public spaces, and even into our homes and schools.

Those of you reading this submission have a responsibility to the citizens you are mandated by Congress to protect. To have the FCC calling for proliferation of a possibly carcinogenic exposure to unknowing crew and passengers (including children and pregnant women) – on flights which are longer in duration than the 30 minute guideline – is morally wrong. What are you going to do about this?

Respectfully submitted,

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