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**Flight crewmembers are not regulated like other radiation workers in the USA and like flight crewmembers in Europe.**

Why? Because the FAA is waiting for us to demand it. They don't want to upset the airlines by implementing new regulations, even though the government recognizes flight crewmembers as radiation workers, unless we care enough to ask for it. The FAA thinking: If you don't care about the toll on your health that radiation exposure is causing, then why should they bother to do anything about it?

**What can you do?**

Let your union representatives, AA supervisor or chief pilot know that you care about this issue and that you want to see efforts move forward to obtain legislative and regulatory protection similar to European flight crew members. Federal legislation and FAA regulation would require all airlines to address concerns relating to in-flight radiation exposure and to share the costs. We need to take a more active role in protecting ourselves, educating ourselves, and in lobbying management, the FAA, and Congress for these necessary changes!

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**For more information:**

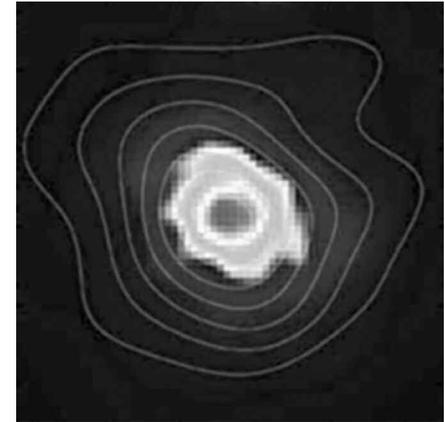
For general knowledge on this subject, as well as information about pregnancy and flying, see the APA Web site ([www.alliedpilots.org](http://www.alliedpilots.org) click on National Committees, Aeromedical and, Radiation), the APFA Web site and the AA Web site. Also, [www.sievert-system.org](http://www.sievert-system.org), and [www.cami.jccbi.gov/AAM-600/Radiation/600radio.html](http://www.cami.jccbi.gov/AAM-600/Radiation/600radio.html). For information on calculating in-flight radiation doses go to [www.cami.jccbi.gov/AAM-600/Radiation/600radio.html](http://www.cami.jccbi.gov/AAM-600/Radiation/600radio.html). For Solar Flare information go to [www.sec.noaa.gov](http://www.sec.noaa.gov) which updates its online information every few minutes, or call the solar hotline at 303.497.3235 for information which is updated every several hours.

**If you have any questions or comments please contact**

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**Some things you should know about  
Crewmember  
Exposure  
to  
In-Flight  
Cosmic  
Radiation**



**I**n-flight Radiation Exposure is a serious concern for all of today's airline flight crewmembers. The government considers airline flight crewmembers to be "occupationally exposed to radiation" (radiation workers) because of the amount of radiation we receive while flying, but we are not regulated as radiation workers. **The FAA thus far has not drafted such regulations and it is clear that they will not do so until we, as flight crewmembers, demand it.**

- The majority of this radiation comes from deep space and the sun, and is known as cosmic radiation. Cosmic radiation is powerful enough to penetrate through the aircraft and cause cellular damage throughout the bodies of everyone onboard the aircraft.
- Flying at night does not significantly reduce your exposure. Cosmic radiation is present both day and night.
- The higher altitude an aircraft flies at, the less atmospheric shielding there is to protect aircraft inhabitants from cosmic radiation.
  - Background radiation levels double with each 6,500 feet of altitude.
  - At 33,000 feet background radiation levels are @ 35 times more than at sea level.
  - At 39,000 feet background radiation levels are @ 64 times more than at sea level.
- During a solar storm event the radiation level at 39,000 feet can be @ 640 times more than at sea level.
- Although extremely rare, a severe solar event can produce much higher radiation levels. During one particularly strong solar storm that occurred in 1956, the radiation levels were equivalent to 100 chest x-rays per hour at 35,000 feet.
- Routes over the North Atlantic to Europe and the North Pacific to Asia have higher in-flight radiation levels. Polar flights to Asia have the highest exposure levels.
- Compared to other radiation workers, including atomic plant workers and medical radiation technicians, flight crewmembers as a group are among the most highly exposed radiation workers.
- In the United States, workers under the jurisdiction of OSHA who are considered to be radiation workers, are also regulated as radiation workers. These regulations

provide for education, training, monitoring, and ongoing medical studies to assess the degree and the hazards of their radiation exposure and to limit exposure to known safe levels. However, air crewmembers are not under OSHA jurisdiction (we are under FAA jurisdiction), so we are not in any way regulated for our radiation exposure.

- The FAA has not made any regulations to protect us from radiation or any other environmental workplace hazards.
- In Europe, since May 2000, flight crewmembers have been regulated as radiation workers.
- Most European airlines do not permit crewmembers to fly during pregnancy largely because of the health risk to the fetus.
- The fetus of a pregnant crewmember is particularly vulnerable, especially in the early stages of pregnancy when the major organs are forming, but unfortunately crewmembers usually don't start maternity leave until the end of pregnancy.
- Two to three months of a typical flying schedule would likely exceed the maximum radiation exposure limit for the fetus of a pregnant crewmember. (One to two months for polar or high latitude flying, i.e. North Atlantic or Tokyo.)
- A pregnant woman flying during a solar storm could exceed the maximum radiation dose to her unborn child during one flight.
- Crewmembers who are pregnant or are trying to become pregnant should avoid North Atlantic and Asian routes, and in all cases fly low time, but it is better not to fly during pregnancy. Take a leave of absence or find ground-based work.
- Pregnancy is not the only concern: New studies are showing that flight crewmembers have higher rates of brain, prostate, breast cancers and leukemia. Much higher rates (three to four times higher than the general population) of malignant melanoma, the deadliest form of skin cancer, have been clearly shown to occur in pilots, and these are not thought to be attributable to lifestyle factors such as more time spent outdoors in the sunshine.
- By age 60 after a typical 30-year flying career, according to FAA's Civil Aerospace Medical Institute, about 35 out of 10,000 jet crewmembers will have already died from cancer induced by in-flight radiation exposure.