COMPOSANTE AIR TRANSAT
SCFP/CUPE
AIR TRANSAT COMPONENT

Did you know?

SUBJECT: COSMIC RADIATIONS

MAY 2019

Members of the Health & Safety Committee of Air Transat Component of CUPE

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The masculine has been used to ease the reading of this document and shall be understood to include the feminine gender.

A WORD FROM YOUR CHAIR

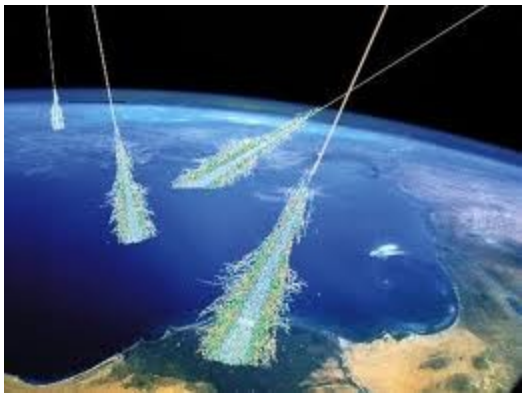
Dear Sisters and Brothers,

In our second info letter « Did you know? », we will discuss Cosmic Radiations. If you have any questions or comments, please do not hesitate to contact any representative listed in the side bar.

In solidarity,

Nathalie Garceau, Chair

On behalf of the Health & Safety Committee



What is cosmic radiation?

Cosmic radiation is defined as a form of ionizing radiation that comes from outer space.

Cosmic radiation includes particles that come from the sun (including solar flares) and radiation that comes from the universe (including supernovae- exploding stars). The term “ionizing” means that the radiation can displace charged particles from atoms. Cosmic radiation affects humans on Earth by disrupting molecules in live cells.

How is cosmic radiation measured?

Cosmic radiation is measured by a unit termed “sieverts” (sV).

* One thousand (1,000) millisieverts (mSv) equals 1 sieverts.
* One million (1,000,000) microsieverts (µSv) equals 1 sieverts.

Did you know?...continued

Level of risk

Low Risk	<1 mSv per year
Moderate Risk	1mSv to < 3 mSv per year
High Risk	> 3 mSv to < 5 mSv per year
Extreme Risk	5 to < 7 mSv per year
Immediate Action Required	> 7 mSv per year

This chart is based on the European Community Aviation Regulations (EASA). EASA are quite often used as a benchmark for aviation safety worldwide. The FAA (U.S Federal Aviation Administration) is also an international standard used in many countries around the world. Both the FAA and EASA mandate that air operators monitor cosmic radiation levels when a flight crew member is expected to surpass 1 mSv per year. Transport Canada also recommends that air operators monitor exposure levels when it is expected that employees will surpass 1 mSv per year. They also recognized that there is a high risk for pregnant flight attendants should the average level of exposure exceed 1mSv.

What are the factors of Cosmic radiation?

The primary factors affecting cosmic radiation exposure are:

- location,
- altitude, and
- solar activity.

Cosmic radiation is deflected around the Earth by the Earth's natural magnetic field. This effect is attenuated at the magnetic poles where the magnetic field strength is the weakest. As such, at Northerly and Southernly latitudes the Earth's defense system is less able to defend against harmful radiation. Additionally, as altitude is increased from the surface of the Earth, the magnetic field is less effective in providing protection (regardless of latitude). It is estimated that an aircraft flying at an altitude of 8,000 meters (approx. 26,000 feet) will expose its passengers to a dose rate of one hundred times greater than that felt at sea level. Finally, the level of activity from the Sun can also play a role, both positive and negative. The Sun's magnetic field helps to protect the Earth while solar release from sunspots can warp the Earth's magnetic field thereby increasing exposure to cosmic radiation.

Therefore, latitude, altitude, time spent at altitude, and solar activity are all factors that affect the amount of cosmic radiation that an individual is exposed to on the ground and while onboard an aircraft.

Why are flight crew at risk?

Flight crews are more at risk than "a normal person" due to the frequency which they spend at altitude. Studies have shown that flight crews are exposed to more radiation per year than nuclear plant workers, and some countries have classified flight crews as radiation workers.

What are the effects?

Possible effects of cosmic radiation on humans include an increased possibility of cancer, eye disease, and genetic defects passed onto future generations. Pregnant women are especially at risk, with an increased risk of prenatal death and a lifetime risk of fatal cancer.

Did you know?...continued

What is the Health&Safety Committee doing about this issue?

In June 2018, CUPE's Health and Safety Chairs together with ALPA presented a proposal to the Company regarding a study and monitoring program for Cosmic radiations. It is based on research made by the European Community Aviation Regulations and Transport Canada. The Health and Safety recommended PC Aire to the employer. PC Aire is a world leader in the field of cosmic radiation monitoring.

PHASE 1: To obtain a research based on the schedules of all Flight Attendants at Air Transat for a year. The level of exposure for cosmic radiations can be calculated for each flight crew according to their actual schedule and their flight routes. This way, we will be able to assess the situation and have a complete view of the issue in our work environment.

PHASE 2: The monitoring program. We are asking for the implementation of a monitoring program for each Flight Attendant that will give them access to their level of exposure based on their actual schedule. This could all be done via Internet and a private access code.

PHASE 3: The levels of risks and what will happen when a Flight Attendant reaches a certain level. This phase will be the most complex one as it will involve a lot of discussions with the Company.

As of March 2019, we are at PHASE 1. PC Aire has been hired by Air Transat to do a research and study on cosmic radiations for all Flight Attendants, based on their 2018 schedules.

The Health and Safety Committee is impatiently waiting for the results. Stay tuned as we will keep you updated on a regular basis on this issue.