

SEIBERSDORF
LABORATORIES



FREQUENTLY ASKED SOLUTIONS



AIRCREW DOSIMETRY SERVICE



Safety for aircrew: Cosmic radiation as a risk

Humans on board of a modern aircraft are significantly stronger exposed to cosmic radiation than on the Earth. The average annual radiation dose received by pilots and flight attendants is higher than typical exposure in medicine, research, industry, and nuclear sector. Flying personnel is also the second most exposed working group (after radon workers). Aircraft operators have therefore to meet specific regulatory requirements with respect to the safety of their flight crew.

YOUR LEGAL OBLIGATIONS

EC Directive 2013/59/EURATOM establishes a basic safety standard for the protection of aircrew against cosmic radiation. When the effective dose received by flying personnel may exceed 1 millisievert (mSv) per year, the respective national authorities require aircraft operators to take the following measures:

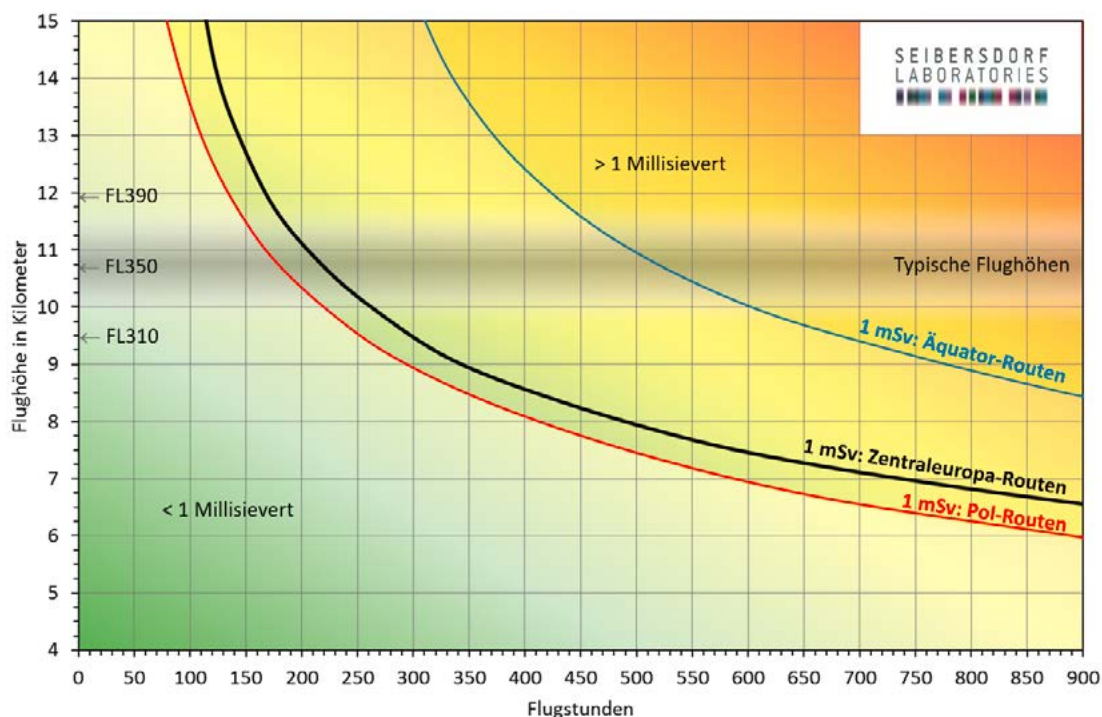
- Determination and assessment of exposure,
- Transmission of the values to the competent authority,
- Dose reduction measures for highly exposed crews,
- Informing affected crews of the health risks associated with their work,
- informing crew members of their respective individual doses,
- additional protective measures against exposure of pregnant pilots or flight attendants.

OUR SERVICE FOR YOU

We operate the only (as of February 2022) state-authorized body in Austria to determine the dose of flying personnel according to §130 StrSchG-2020. We provide the following services worldwide according to the respective legal requirements:

- Dose determination for each of your flights
- Dose records for your crews
- Monitoring of the legal dose limits
- Certification of radiation exposure
- Transmission of your dose values to the competent national authority

Our testing laboratory is accredited according to EN ISO/IEC 17025. We are internationally leading in the special field of flight dosimetry, e.g. in the development and evaluation of measurement and calculation methods for radiation exposure in aircraft.



Sources: European Commission, Cosmic Radiation Exposure of Aircraft Crew, EURADOS WG5 Report, 2004, ISBN 92-894-8448-9; Radiation Protection Ordinance for Aircrew.

HOW MUCH IS YOUR CREW EXPOSED?

We offer you this diagram as a service for a simple and quick rough estimation of the radiation dose of your flying personnel.

Use the diagram taking into account the flight hours and respective flight altitudes in the polar or equatorial region.

Please note that this diagram cannot replace a sound calculation for compliance with your legal obligations.

Should you already reach the relevant limit of 1 millisievert (mSv) with this rough estimate, a legally valid dose assessment by our accredited testing laboratory is recommended.

HOW CAN WE SUPPORT YOU?

We offer the following services:

- Determination of the dose values of your flying personnel
- Transmission of the dose values to the competent authority
- Prospective dose estimation
- Dose estimation during solar storms
- Individual adaptation to your data interface
- Measurements of radiation exposure in aircraft
- Technical consultations

AVIDOS



The web service AVIDOS of Seibersdorf Labor GmbH is available in cooperation with the European Space Agency (ESA) at: <https://swe.ssa.esa.int/avidos-federated>.

The web service AVIDOS at the ESA Space Weather Portal determines radiation doses due to cosmic rays for a selected flight route and altitude. It is an Internet informational and educational service for the public, flight personnel, frequent flyers, and experts. However, this information and training web service cannot replace a legally required dose determination!



by AVIDOS © Seibersdorf Labor GmbH map: esa

CONTACT

Seibersdorf Labor GmbH
Aerospace Radiation Competence Center
2444 Seibersdorf, Austria

www.seibersdorf-laboratories.at
Fax: +43 50550 - 2544

Secretary
+43 50550 - 2580
flugdosimetrieservice@seibersdorf-laboratories.at