

Abstract #126

Survey of the Radiological Impact of the Normal Transport of Radioactive Material by Air in the United Kingdom

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The transport regulations published by the International Atomic Energy Agency (IAEA) form the basis for the regulation of the transport of radioactive materials in most countries, including the United Kingdom. The IAEA regulations include a requirement for competent authorities to arrange for periodic assessments of the radiological impact of the transport of radioactive materials. Over the last 30 years the regulatory authority in UK for the transport of radioactive material requested the Health Protection Agency and its predecessor, the National Radiological Protection Board, to carry out periodic assessments of the radiological impact of the transport of radioactive materials under normal conditions covering the three modes of transport (road and rail, sea and air). The latest in this series of assessments was commissioned in 2012 and covered the transport of radioactive materials by air from to and within the UK. The objectives of the survey were:

- To determine transport and working patterns and make measurements in and around aircraft transporting radioactive materials as appropriate.
- To identify significant operations in terms of numbers of packages and/or people involved as well as those operations that could give rise to the highest doses.
- To assess maximum individual and collective doses to workers and public.
- To assess the parameters used to derive the ICAO segregation tables.

This paper presents the results of this survey and compares them with those of previous surveys carried out in 1990 and 2003 to identify trends. Preliminary results indicate that the number of packages containing radioactive material for medical use has increased and that doses to crew members and passengers on aircrafts carrying such packages remain very low when compared to the doses they receive from cosmic radiation. The study also indicates that the highest doses are received by workers at airport warehouses loading packages onto aircrafts but procedures are being put in place to mechanise the operations and reduce exposures.

For completeness the results of the assessment on transport of radioactive materials by road and rail and sea carried out in 2005 and 2009 are also briefly summarised.