



WORKING PAPER

**DANGEROUS GOODS PANEL (DGP)
MEETING OF THE WORKING GROUP OF THE WHOLE**

Beijing, China, 25 October to 3 November 2006

Agenda Item 2: Development of recommendations for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) for incorporation in the 2009/2010 Edition

2.8: Part 8 — Provisions Concerning Passengers and Crew

**ALLOWING EXCEPTED RADIOACTIVE INSTRUMENTS FOR
PASSENGERS**

(Presented by the Organisation for the Prohibition of Chemical Weapons)

SUMMARY

This paper discusses the transport by air of scientific instruments which contain radioactive substances, in particular, a hand-held detector known as CAM and/or RAID used by OPCW during inspections. It proposes amendment to Part 8 to include the possibility for radioactive instruments meeting the criteria as “radioactive material, excepted packages” in the provisions for dangerous goods carried by passengers or crew.

Action by the DGP-WG is in paragraph 3.

1. BACKGROUND

1.1 Part 7;2.1.1 refers to the possibility to take “radioactive material, excepted packages” on the flight deck of an aircraft. However, there is no similar provision for passengers and crew members (Part 8;1.1.2).

2. PROBLEM

2.1 As many scientific instruments nowadays contain radioactive sources as an integral part of the instrument, there is a growing need to clarify the possibilities for passengers and crew members accompanying these types of instruments. The users of these types of instruments for their professional work will need to accompany such instruments on board the aircraft so that they can perform their job at

their destination without delay. The Organisation for the Prohibition of Chemical Weapons (OPCW) inspections fall into this category.

2.2 The instrument which OPCW requests this panel's consideration is a handheld detector, known as "CAM" and/or "RAID". This detector is one of the most essential instruments that the OPCW requires for our own protection during inspections. It contains a small quantity of radioactive material, i.e. the "RAID" contains Ni-63 with the highest radioactivity of 444 MBq, and the surface radiation is also less than 5 MicroSieverts/Hour, which meets the criteria to be identified as: UN 2911, **Radioactive material, excepted package — instruments**.

2.3 This detector has been designed for safe use; hand carried and handheld during use without any additional protection to avoid radioactive hazard. The radioactive source is encapsulated to prevent the leakage, and the shielding material prevents exposure to radiation. In addition, the users shall have specific training on handling and packing, the detectors shall have regular maintenance and certificates, and the detectors shall be transported in a specially designed container to prevent possible damage during transportation. Such safety design and preventive measures enable the users to transport handheld detectors safely.

2.4 In comparison, possible transportation of mercurial barometers by some weather bureau officials may be considered as more risk on board an aircraft than that of handheld detectors accompanied by OPCW inspectors. Furthermore, a pacemaker may contain Pu-238 with the radioactivity of 111 GBq, which is 250 times more radioactive than that of a handheld detector.

2.5 It should be noted that the OPCW has already been given the possibility to transport "Chemical Weapon Samples" UN 3315 according to Special Provision A106, even on passenger aircraft.

3. ACTION BY THE DGP-WG

3.1 The DGP-WG is invited to include the possibility for radioactive instruments, meeting the criteria as "radioactive material, excepted packages" in the provisions for dangerous goods carried by passengers or crew in Part 8;1.1.2 by including the following:

With approval from the operator(s), radioactive instruments meeting the requirements as specified in 2;7.9.

APPENDIX

CAM AND RAID-M — TECHNICAL SPECIFICATIONS

The CAM and RAID-M are monitors for the detection of toxic substances, for example nerve agents and blister agents and some industrial toxic agents.

Here are some technical details about the instruments,

Radionuclide **Ni-63**

Chemical form **Solid**

Activity in Bq **370 MBq/444 MBq(for the Raid)**

The UN transport number is **UN2911**

The UN class is **7**

The UN proper shipping name is **Radioactive Material, excepted package instruments**

Please note that the radionuclide is fully encapsulated in a capsule about 1 cm square inside the instruments so the radiation outside of the instrument is almost 0. Under the local regulations we have the instruments wipe tested once a year, this wipe test to be certain that our instruments are not leaking any radiation from the capsule and we receive a certificate stating this fact. Every two years the instruments are fully serviced by the manufacturers.

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