International Civil Aviation Organization

WORKING PAPER

DGP-WG/05-WP/52
14/4/05

DANGEROUS GOODS PANEL (DGP)

MEETING OF THE WORKING GROUP OF THE WHOLE

Montreal, 18 to 22 April 2005

Agenda Item 2: Development of recommendations for amendments to the *Technical Instructions* for incorporation in the 2007/2008 edition
2.5: Part 5 — Shipper's Responsibilities

MAGNETIZED MATERIALS: MAGNETIC FIELD STRENGTH AND LOADING REQUIREMENTS

(Presented by M. Hinoul)

1. INTRODUCTION

1.1 When reading the ICAO Technical Instructions for the loading of magnetised material it seems to be confusion about the loading of multiple packages of magnetised material.

> **ICAO TI 7;2.10**
>
> "Magnetised material must not be loaded in such a position that they will have a significant effect on the direct reading of the magnetic compasses or on the master compass detector units. The significant effect will be produced if the magnetic field of the magnetised materials reaches 0.418 A/m at the location of the aircraft compasses or compass detector units. The **minimum stowage distance** of the magnetized materials to the aircraft compasses or compass detector units will **depend on the intensity of the magnetized materials field strength and varies from 1.5 m** for those materials which just meet the threshold level of the magnetized material definition in Part 2, Chapter 9, to 4.6 m for materials which possess the maximum field strength permitted by Packing Instruction 902 in Part 4, Chapter 11. …//..
>
> **Multiple packages may produce a cumulative effect**. See Packing Instruction 902 for determination of shielding requirements."

1.2 By using a stowing distance of 4.6 meters from the aircraft compasses or compass detector units, one will ensure the minimum required separation for packages with a maximum permitted magnetic field strength (further on referred to as MFS) as per PI 902 (0.00525 gauss) even without knowing the exact MFS.

1.3 However in case of multiple packages the only options for loading are either:

Stowing each package at a minimum separation distance of 4.6m distance from the aircraft compasses and compass detector units and from each other. Unfortunately in some aircraft you will not have enough space for this method.

or

Knowing the total magnetic field strength that these packages produce either by:

- measuring the cumulative magnetic field strength, but not all handling agents have the required measuring equipment; or
- Calculating the sum of the individual magnetic field strength values, which means that one would need to know the magnetic field strength of each individual package.

Unfortunately the shipper is not required to mention these values on any document or even on the package.

Due to this reasons some operators are forced to load multiple packages with magnetized materials on different aircrafts what is not always the best solution for logistical and economic reasons.

1.4 In order to facilitate the loading of magnetized materials, especially multiple packages with magnetized materials it is proposed to introduce an obligation for the shipper to mention the magnetic field strength of each package on the shipping document and on the package

2. PROPOSAL

2.1 Introduce new paragraph 5;2.4.13 as follows:

2.4.13 Special marking requirement for magnetized materials

The magnetic field strength (A/m) must be marked on each package containing magnetized materials, adjacent to the Proper Shipping Name.

2.2 Add a new sentence to 5;4.1.5.1 as follows:

In addition, for magnetized materials, the magnetic field strength (A/m) per package must also be indicated.

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