International Civil Aviation Organization
WORKING PAPER

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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
2.3: Part 3 — Dangerous Goods List and Limited Quantities Exceptions

ADDITION OF SPECIAL PROVISION A2 TO UN 3468

(Presented by R. Richard)

1. INTRODUCTION

1.1 The entry "Hydrogen in a metal hydride storage system" (UN 3468) was introduced in the 2005/2006 edition of the Technical Instructions. Under the entry, transport of these storage systems is forbidden by both passenger and cargo-only aircraft.

1.2 As stated in the associated Special Provision A143, the main hazard posed by these systems in transport is that of the presence of hydrogen in the system. This leads to the assigned Division 2.1 classification for these devices. However, hydrogen itself is permitted for transport by cargo-only aircraft, as are various other flammable gases. An additional hazard that may be associated with these systems is that the metal hydride in the system may react with air should it come in contact with air. However, in these systems the metal hydride is contained with the hydrogen in a hermetically sealed pressure receptacle that, by its very nature, must be designed to contain the hydrogen gas at any internal pressure that may be encountered during transport or during operation of the system.

1.3 As these metal hydride hydrogen storage systems - many of which are rather small - begin to find increasing application as a source for powering fuel cells, the need sometimes arises to transport them by cargo-only aircraft. Since the main hazard posed by the systems is that of the presence of hydrogen (which is authorized by the Technical Instructions for transport by cargo-only aircraft), and the hydrogen and metal hydride in the system is contained in a pressure receptacle not unlike those authorized for the transport of hydrogen, it is considered appropriate that a mechanism be provided under the Technical Instructions to allow the transport of these devices without resorting to the rather cumbersome "exemption" procedure in Part 1; 2.2.2. To accomplish this, it is proposed that Special Provision "A2" be added to the entry for "Hydrogen in a metal hydride storage system" (UN 3468) in the Dangerous Goods List (Table 3-1). In this way, such storage systems would be permitted to be transported on cargo-only aircraft with the approval of the appropriate authority of the State of Origin, upon a determination by that authority that the system will provide the necessary level of safety in transport.

2. **PROPOSAL**

2.1 In Table 3-1, add special provision A2 to the entry for "Hydrogen in a metal hydride storage system" (UN 3468).

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