

## DANGEROUS GOODS PANEL

Dubai, 31 March to 4 April 2003

### Agenda Item 2 Development of recommendations for amendments to the Technical : Instructions for incorporation in the 2005/2006 edition

#### REVISED ICAO TECHNICAL INSTRUCTIONS PART 4, CHAPTER 11; PACKING INSTRUCTION 900

(Presented by Horst Busacker)

#### 1. INTRODUCTION

1.1 The transport of **Vehicles, flammable gas powered**, as described in Part 4, Chapter 11 PI 900 b) requires that the pressure vessel(s) containing the flammable gas must be completely emptied and all lines from the vessel to the gas regulators, and the gas regulators themselves, must also be drained of all traces of flammable gas. To ensure that these conditions are met, gas shut-off valves must be left open and connections of lines to gas regulators must be left disconnected upon delivery of the vehicle to the operator.

1.2 As a result of these requirements the vehicles can lose a part of their national technical certification and licensing and therefore may not be operated, until these vehicles are re-certified by appropriate authorities and/or institutions.

#### 2. PROPOSAL

2.1 Amend Part 4, Chapter 11 Packing Instructions 900 by adding an alternative as following:

b) 1) for flammable gas-powered vehicles, machines or equipment, pressurised vessels containing..... before loading the vehicle aboard the aircraft;

or alternatively,

2) flammable gas-powered vehicles, machines or equipment, which use pressurised vessels and gas regulators being equipped with electrically operated valves, which close automatically in case the power is cut off, may be transported under the following conditions:

- i) The power feed to the valves has to be interrupted, by which the valves both at the pressure vessel and gas regulator close automatically.
- ii) After closing the pressure vessel valve, the consumer (e.g. flammable powered engine, hydrogen fuel cell) must be operated until it comes to a stop due to the lack of gas.
- iii) In no part of the system between pressure vessel and electrical operated shut off valve, shall the pressure exceed more than 5% of the maximum allowable working pressure. The remnants in the pressure system and its components must be in the gaseous phase.

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