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
2.4: Part 4 — Packing Instructions

AMENDMENTS TO PACKING INSTRUCTION 900

(Presented by M. Evans)

1. INTRODUCTION

1.1 UN 3166 applies to two proper shipping names, Vehicles, flammable liquid powered, and Engines, internal combustion. The proper shipping name Vehicles, flammable liquid powered, is used where the engine is contained within a vehicle, and Engines, internal combustion, is used where the engine is being shipped separately. Both entries use Packing Instruction 900.

1.2 Packing Instruction 900 initially only applied to Vehicles, flammable liquid powered and was amended in the 2001/2002 Edition of the Technical Instructions to incorporate the shipment of an internal combustion engine when being shipped as a separate item.

1.3 When the packing instruction was amended, the requirement agreed to for the carriage of an internal combustion engine that is not contained within a vehicle was not added as a separate requirement, but added to the bottom of the packaging instruction as item g). This therefore became part of the list of requirements that govern the shipment of vehicles, machines or equipment that contain an internal combustion engine.

2. PROPOSAL

2.1 Amend Packing Instruction 900 as follows:

- move item g) to the end of the Packing Instruction as a separate item; and
- renumber the list from a) to i); and

- amend the wording at the bottom of the Packing Instruction regarding the carriage of replacement dangerous goods to reflect the change in the list numbering.

900	PACKING INSTRUCTION 900	900

Vehicles, machines or equipment containing internal combustion engines or batteries must meet the following requirements:

a) except as otherwise provided for in this Packing Instruction, fuel tanks must be drained of fuel and tank caps fitted securely. Special precautions are necessary to ensure complete drainage of the fuel system of vehicles, machines or equipment incorporating internal combustion engines, such as lawn mowers and outboard motors, where such machines or equipment could possibly be handled in other than an upright position. When it is not possible to handle in other than an upright position, vehicles, except those with diesel engines, must be drained of fuel as far as practicable, and if any fuel remains, it must not exceed one-quarter of the tank capacity. Vehicles equipped with diesel engines are excepted from the requirement to drain the fuel tanks, provided that a sufficient ullage space has been left inside the tank to allow fuel expansion without leakage, and the tank caps are tightly closed. A careful check must be made to ensure there are no fuel leakages;

b) for flammable gas-powered vehicles, machines or equipment, pressurized vessels containing the flammable gas must be completely emptied of flammable gas. Lines from vessels to gas regulators, and gas regulators themselves, must also be drained of all trace 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. Shut-off valves must be closed and lines reconnected at gas regulators before loading the vehicle aboard the aircraft;

c) if non-spillable batteries, as defined in Packing Instruction 806, are installed, they must be securely fastened in the battery holder of the vehicle, machine or equipment and be protected in such a manner as to prevent damage and short circuits;

d) if spillable batteries are installed, they must be securely fastened in the battery holder of the vehicle, machine or equipment and be protected in such a manner as to prevent damage and short circuits. However, if it is possible for the vehicle, machine or equipment to be handled in such a way that batteries would not remain in their intended orientation, they must be removed and packed according to Packing Instruction 433 or 800 as applicable;

e) dangerous goods required for the operation of the vehicle, machine or equipment, such as fire extinguishers, tire inflation canisters, safety devices, etc., must be securely mounted in the vehicle, machine or equipment. Aircraft may also contain other articles and substances which would otherwise be classified as dangerous goods but which are installed in that aircraft in accordance with the pertinent airworthiness requirements and operating regulations. If fitted, life-rafts, emergency escape slides and other inflation devices must be protected such that they cannot be activated accidentally. Vehicles containing dangerous goods identified in Table 3-1 as forbidden on passenger aircraft may only be transported on cargo aircraft;

f) in the event that vehicles, machines or equipment containing internal combustion engines are being shipped in a dismantled state such that fuel lines have been disconnected, those fuel lines must be sealed securely;

~~g) When internal combustion engines are being shipped separately, all fuel, coolant or hydraulic systems remaining in or on the engine must be drained as far as practicable and all disconnected fluid pipes must be sealed with leak-proof caps, which are positively retained.~~

~~h~~g) vehicles equipped with theft-protection devices, installed radio communications equipment or navigational system must have such devices, equipment or system disabled;

~~i~~h) if lithium batteries are installed, they must be of the type that has successfully passed the tests specified in the UN Manual of Tests and Criteria, Part III, subsection 38.3, must be securely fastened in the vehicle, machinery or equipment and must be protected in such a manner so as to prevent damage and shot circuits; and

~~j~~i) if sodium batteries are installed they must conform to the requirements of special provision A94, must be securely fastened in the vehicle, machinery or equipment and must be protected in such a manner so as to prevent damage and short circuits.

When internal combustion engines are being shipped separately, all fuel, coolant or hydraulic systems remaining in or on the engine must be drained as far as practicable and all disconnected fluid pipes must be sealed with leak-proof caps, which are positively retained.

Replacements for the dangerous goods permitted in paragraphs a) to~~j~~ i) must not be carried under this packing instruction.

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