Doc 9284-AN/905
2005-2006 Edition
ADDENDUM
../02/05

INTERNATIONAL CIVIL AVIATION ORGANIZATION

TECHNICAL INSTRUCTIONS FOR THE SAFE TRANSPORT OF DANGEROUS GOODS BY AIR

2005-2006 EDITION

ADDENDUM

The attached pages should be added to the 2005-2006 Edition of the Technical Instructions (Doc 9284).

TECHNICAL INSTRUCTIONS FOR THE SAFE TRANSPORT OF DANGEROUS GOODS BY AIR

Amend the Technical Instructions as follows:

Part 2

CLASSIFICATION OF DANGEROUS GOODS

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Chapter 6
CLASS 6 — TOXIC AND INFECTIOUS SUBSTANCES

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6.3 DIVISION 6.2 — INFECTIOUS SUBSTANCES

6.3.1 Definitions

For the purposes of these Instructions:

6.3.1.1 *Infectious substances* are substances which are known to contain, or are reasonably expected to contain, pathogens. Pathogens are defined as micro-organisms (including bacteria, viruses, rickettsiae, parasites, fungi) and other agents such as prions, which can cause disease in humans or animals.

6.3.1.2 *Biological products* are those products derived from living organisms which are manufactured and distributed in accordance with the requirements of appropriate national authorities, which may have special licensing requirements, and are used either for prevention, treatment or diagnosis of disease in humans or animals, or for development, experimental or investigational purposes related thereto. They include, but are not limited to, finished or unfinished products such as vaccines.

6.3.1.3 *Cultures* ~~(laboratory stocks)~~ are the result of a process by which pathogens are intentionally propagated. This definition does not include human or animal patient specimens as defined below in 6.3.1.4. ~~are amplified or propagated in order to generate high concentrations, thereby increasing the risk of infection when exposure to them occurs. This definition refers to cultures prepared for the intentional generation of pathogens and does not include cultures intended for diagnostic or clinical purposes.~~

6.3.1.4 Patient specimens are human or animal materials, collected directly from humans or animals, including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluid swabs, and body parts being transported for purposes such as research, diagnosis, investigational activities, disease treatment and prevention.

6.3.1.~~4~~5 *Medical or clinical wastes* are wastes derived from the medical treatment of animals or humans or from bio-research.

6.3.2 Classification of infectious substances

6.3.2.1 Infectious substances must be classified in Division 6.2 and assigned to UN 2814, UN 2900, UN 3291 or UN 3373 as appropriate.

6.3.2.2 Infectious substances are divided into the following categories:

6.3.2.2.1 *Category A:* An infectious substance which is transported in a form that, when exposure to it occurs, is capable of causing permanent disability, life-threatening or fatal disease in otherwise healthy ~~to~~ humans or animals. Indicative examples of substances that meet these criteria are given in Table 2-10.

Note.— An exposure occurs when an infectious substance is released outside of the protective packaging resulting in physical contact with humans or animals.

a) Infectious substances meeting these criteria which cause disease in humans or in both humans and animals must be assigned to UN 2814. Infectious substances which cause disease only in animals must be assigned to UN 2900.

b) Assignments to UN 2814 or UN 2900 must be based on the known medical history and symptoms of the source human or animal, endemic local conditions, or professional judgement concerning individual circumstances of the source human or animal.

Note 1.— The proper shipping name for UN 2814 is **Infectious substance, affecting humans.** *The proper shipping name for UN 2900 is* **Infectious substance, affecting animals** *only.*

Note 2.— The following table (Table 2-10) is not exhaustive. Infectious substances, including new or emerging pathogens, which do not appear in Table 2-10 but which meet the same criteria must be assigned to Category A. In addition, if there is doubt as to whether or not a substance meets the criteria it must be included in Category A.

Note 3.— In Table 2-10, the micro-organisms written in italics are bacteria, mycoplasma, rickettsiae or fungi.

6.3.2.2.2 *Category B:* An infectious substance which does not meet the criteria for inclusion in Category A. Infectious substances in Category B must be assigned to UN 3373 ~~except that cultures as defined in 6.3.1.3 must be assigned to UN 2814 or UN 2900 as appropriate~~.

Note.— The proper shipping name of UN 3373 is ***Diagnostic specimens*** *or* ***Clinical specimens*** *or* ***Biological substances, category B****. From 1 January 2007, the use of the shipping names Diagnostic specimens and Clinical specimens will no longer be permitted.*

6.3.2.3 Substances which do not contain infectious substances or substances which are unlikely to cause disease in humans or animals are not subject to these Instructions unless they meet the criteria for inclusion in another class.

6.3.2.4 Dried blood spots, collected by applying a drop of blood onto absorbent material, or faecal occult blood screening tests and b~~B~~lood or blood components that have been collected for the purposes of transfusion or for the preparation of blood products to be used for transfusion or transplantation and any tissues or organs intended for use in transplantation are not subject to these Instructions.

6.3.2.5 Substances for which there is a low probability that infectious substances are present, or where the concentration is at a level naturally encountered, are not subject to these Instructions. Examples

are: foodstuffs, water samples, living persons and substances that have been treated so that the pathogens have been neutralized or deactivated so that they no longer pose a health risk.

6.3.2.6 A live animal that has been intentionally infected and is known or suspected to contain an infectious substance must not be transported by air unless the infectious substance contained cannot be consigned by any other means. Infected animals may only be transported under terms and conditions approved by the appropriate national authority.

6.3.3 Biological products

For the purposes of these Instructions, biological products are divided into the following groups:

a) Those which are manufactured and packaged in accordance with the requirements of appropriate national authorities and transported for the purposes of final packaging or distribution, and use for personal health care by medical professionals or individuals. Substances in this group are not subject to these Instructions.

b) Those which do not fall under paragraph a) and are known or reasonably believed to contain infectious substances and which meet the criteria for inclusion in Category A or Category B. Substances in this group must be assigned to UN 2814, UN 2900 or UN 3373, as appropriate.

Note.— Some licensed biological products may present a biohazard only in certain parts of the world. In that case, appropriate national authorities may require these biological products to be in compliance with local requirements for infectious substances or may impose other restrictions.

6.3.4 Genetically modified micro-organisms and organisms

Genetically modified micro-organisms not meeting the definition of infectious substances must be classified according to Chapter 9.

6.3.5 Medical or clinical wastes

6.3.5.1 Medical or clinical wastes containing Category A infectious substances ~~or containing Category B infectious substances in cultures~~ must be assigned to UN 2814 or UN 2900 as appropriate. Medical or clinical wastes containing infectious substances in Catogory B, ~~other than cultures,~~ must be assigned to UN 3291.

6.3.5.2 Medical or clinical wastes that are reasonably believed to have a low probability of containing infectious substances must be assigned to UN 3291.

Note.— The proper shipping name for UN 3291 is ***Clinical waste, unspecified, n.o.s.*** *or* ***(Bio) Medical waste, n.o.s.*** *or* ***Regulated medical waste, n.o.s.***

6.3.5.3 Decontaminated medical or clinical wastes that previously contained infectious substances are not subject to these Instructions unless they meet the criteria for inclusion in another class.

Table 2-10. Indicative examples of infectious substances included in Category A in any form unless otherwise indicated (6.3.2.2.1 (a))

UN Number and Proper Shipping Name	*Micro-organism*
UN 2814 Infectious substances affecting humans	*Bacillus anthracis (cultures only)* *Brucella abortus (cultures only)* *Brucella melitensis (cultures only)* *Brucella suis (cultures only)* *Burkholderia mallei* – *Pseudomonas mallei* – Glanders *(cultures only)* *Burkholderia pseudomallei – Pseudomonas pseudomallei (cultures only)* *Chlamydia psittaci* – avian strains (cultures only) *Clostridium botulinum (cultures only)* *Coccidioides immitis (cultures only)* *Coxiella burnetii (cultures only)* Crimean-Congo hemorrhagic fever virus Dengue virus (cultures only) Eastern equine encephalitis virus (cultures only) *Escherichia coli*, verotoxigenic (cultures only) Ebola virus Flexal virus *Francisella tularensis (cultures only)* Guanarito virus Hantaan virus ~~Hantaviruses causing hantavirus pulmonary syndrome~~ Hantavirus causing hemorragic fever with renal syndrome Hendra virus Hepatitis B virus (cultures only) Herpes B virus (cultures only) Highly pathogenic avian influenza virus (cultures only) Human immunodeficiency virus (cultures only) Japanese Encephalitis virus (cultures only) Junin virus Kyasanur Forest disease virus Lassa virus Machupo virus Marburg virus Monkeypox virus *Mycobacterium tuberculosis (cultures only)* Nipah virus Omsk hemorrhagic fever virus *Poliovirus (cultures only)* Rabies virus (cultures only) *Rickettsia ~~rickettsii~~ prowazekii (cultures only)* *Rickettsia rickettsii (cultures only)*

UN Number and Proper Shipping Name	*Micro-organism*
	Rift Valley fever virus (cultures only) *Russian spring-summer encephalitis virus (cultures only)* Sabia virus *Shigella dysenteriae type 1 (cultures only)* *Tick-borne encephalitis virus (cultures only)* Variola virus Venezuelan equine encephalitis virus (cultures only) *West Nile virus (cultures only)* *Yellow fever virus (cultures only)* *Yersinia pestis* (cultures only)
UN 2900 **Infectious substances affecting animals** only	~~African horse sickness virus~~ African swine fever virus (cultures only) Avian paramyxovirus Type 1 – Velogenic Newcastle disease virus (cultures only) ~~Bluetongue virus~~ Classical swine fever virus (cultures only) Foot and mouth disease virus (cultures only) Goatpox virus (cultures only) Lumpy skin disease virus (cultures only) *Mycoplasma mycoides* – Contagious bovine pleuropneumonia (cultures only) Peste des petits ruminants virus (cultures only) Rinderpest virus (cultures only) Sheep-pox virus (cultures only) Swine vesicular disease virus (cultures only) Vesicular stomatitis virus (cultures only)

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Part 3

DANGEROUS GOODS LIST AND LIMITED QUANTITIES EXCEPTIONS

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Table 3-1. Dangerous Goods List

Name	*UN No.*	*Class or division*	*Subsidiary risk*	*Labels*	*State variations*	*Special provisions*	*UN packing group*	*Passenger aircraft*		*Cargo aircraft*	
								Packing instruction	*Max. net quantity per package*	*Packing instruction*	*Max. net quantity per package*
1	2	3	4	5	6	7	8	9	10	11	12
Biological substance, category B	3373	6.2		None				See 650		See 650	
Clinical Specimens	3373	6.2		None		~~A141~~		See 650		See 650	
Diagnostic Specimens	3373	6.2		None		~~A141~~		See 650		See 650	

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Chapter 3
SPECIAL PROVISIONS

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Table 3-2. Special Provisions

+	~~A141~~	~~This entry applies to human or animal material including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluids, and body parts being transported for purposes such as research, diagnosis, investigational activities, disease treatment or prevention~~.

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Part 4

PACKING INSTRUCTIONS

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Chapter 8

CLASS 6 — TOXIC AND INFECTIOUS SUBSTANCES

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≠ **650** **PACKING INSTRUCTION 650** **650**

This packing instruction applies to UN 3373.

1) The packaging must be of good quality, strong enough to withstand the shocks and loadings normally encountered during transport, including transhipment between transport units and between transport units and warehouses as well as any removal from a pallet or overpack for subsequent manual or mechanical handling. Packagings must be constructed and closed to prevent any loss of contents that might be caused under normal conditions of transport by vibration or by changes in temperature, humidity or pressure.

2) The packaging must consist of three components:

   a) a primary receptacle;

   b) a secondary packaging; and

   c) a rigid outer packaging.

3) Primary receptacles must be packed in secondary packagings in such a way that, under normal conditions of transport, they cannot break, be punctured or leak their contents into the secondary packaging. Secondary packagings must be secured in outer packagings with suitable cushioning material. Any leakage of the contents must not compromise the integrity of the cushioning material or of the outer packaging.

4) For transport, the mark illustrated below must be displayed on the external surface of the outer packaging on a background of a contrasting colour and must be clearly visible and legible. The mark must be in the form of a square set at an angle of 45° (diamond-shaped) with each side having a length of at least 50 mm, the width of the line must be at least 2 mm, and the letters and numbers must be at least 6 mm high. The proper shipping name "Diagnostic specimen" ~~or~~ ,"Clinical specimen" or "Biological substance, category B" in letters at least 6 mm high must be marked on the outer package adjacent to the diamond-shaped mark.

5) At least one surface of the outer packaging must have a minimum dimension of 100 mm × 100 mm.

6) The completed package must be capable of successfully passing the drop test in 6;6.2 as specified in 6;6.1.5 of the Instructions except that the height of the drop must not be less than 1.2 m.

7) For liquid substances:

   a) The primary receptacle(s) must be leakproof and must not contain more than 1 litre;

   b) The secondary packaging must be leakproof;

   c) If multiple fragile primary receptacles are placed in a single secondary packaging, they must be either individually wrapped or separated to prevent contact between them;

   d) Absorbent material must be placed between the primary receptacle(s) and the secondary packaging. The absorbent material must be in quantity sufficient to absorb the entire contents of the primary receptacle(s) so that any release of the liquid substance will not compromise the integrity of the cushioning material or of the outer packaging;

   e) The primary receptacle or the secondary packaging must be capable of withstanding, without leakage, an internal pressure of 95 kPa (0.95 bar);

   f) The outer package must not contain more than 4 litres. This quantity excludes ice, dry ice or liquid nitrogen when used to keep specimens cold.

8) For solid substances:

   a) The primary receptacle(s) must be siftproof and must not exceed the outer packaging mass limit;

   b) The secondary packaging must be siftproof;

   c) If multiple fragile primary receptacles are placed in a single secondary packaging, they must be either individually wrapped or separated to prevent contact between them;

   d) Except for packages containing body parts, organs or whole bodies, the outer package must not contain more than 4 kg. This quantity excludes ice, dry ice or liquid nitrogen when used to keep specimens cold;

   e) If there is any doubt as to whether or not residual liquid may be present in the primary receptacle during transport, then a packaging suitable for liquids, including absorbent materials, must be used.

9) Refrigerated or frozen specimens: ice, dry ice and liquid nitrogen:

   a) When dry ice or liquid nitrogen is used to keep specimens cold, all applicable requirements of these Instructions must be met. When used, ice or dry ice must be placed outside the secondary packagings or in the outer packaging or an overpack. Interior supports must be provided to secure the secondary packagings in the original position after the ice or dry ice has dissipated. If ice is used, the outside packaging or overpack must be leakproof. If carbon dioxide, solid (dry ice) is used, the packaging must be designed and constructed to permit the release of carbon dioxide gas to prevent a build-up of pressure that could rupture the packagings;

   b) The primary receptacle and the secondary packaging must maintain their integrity at the temperature of the refrigerant used as well as the temperatures and the pressures which could result if refrigeration were lost.

10) When packages are placed in an overpack, the package markings required by this packing instruction must either be clearly visible or be reproduced on the outside of the overpack.

11) Infectious substances assigned to UN 3373 which are packed and marked in accordance with this packing instruction are not subject to any other requirement in these Instructions except for the following:

   a) the proper shipping name, UN number and the name, address and telephone number of a person responsible must be provided on a written document (such as an air waybill) or on the package;

   b) classification must be in accordance with 2;6.3.2;

   c) the incident reporting requirements in 7;4.4 must be met; and

   d) the inspection for damage or leakage requirements in 7;3.1.3 and 7;3.1.4;

   e) passengers and crew members are prohibited from transporting infectious substances either as, or in, carry-on baggage or checked baggage or on their person.

12) Clear instructions on filling and closing such packages must be provided to the consignor or to the person who prepares the package (e.g. patient) by packaging manufacturers and subsequent distributors to enable the package to be correctly prepared for transport.

13) Other dangerous goods must not be packed in the same packaging as Division 6.2 infectious substances unless they are necessary for maintaining the viability, stabilizing or preventing degradation or neutralizing the hazards of the infectious substances. A quantity of 30 ml or less of dangerous goods included in Classes 3, 8 or 9 may be packed in each primary receptacle containing infectious substances. When these small quantities of dangerous goods are packed with infectious substances in accordance with this packing instruction no other requirements in these Instructions need be met.

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