

LA NOSTRA
ESPERIENZA,
LA VOSTRA
SICUREZZA.

Shipment of biological samples: rules and critical issues



The transport of Animal specimens must be performed,

SAFELY	minimising the risk of exposure (people, susceptible animal populations and the environment)
TIMELY	allowing for a rapid processing of the specimens
EFFECTIVELY	protecting the integrity of the specimens, ensuring thus the reliability of the analytical response
EFFICIENTLY	properly setting up packaging and shipping, thus pursuing a;
LEGALLY	Whole shipping procedure compliant with the relevant local, national and international regulations



ICAO / IATA → Technical Instructions for the Safe Transport of Dangerous Goods by **Air**

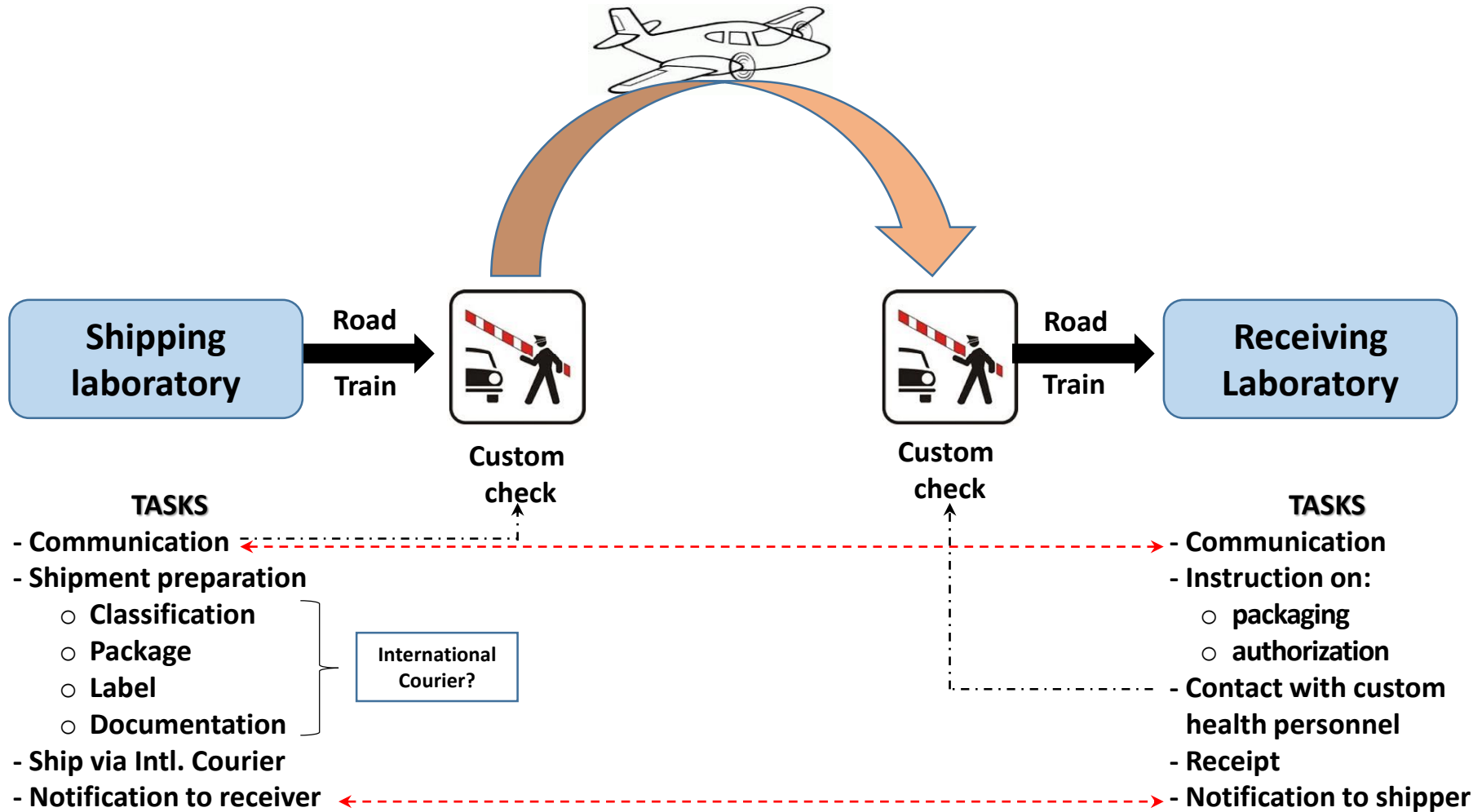
IMDG → International **Maritime** Dangerous Goods Code

RID → International Carriage of Dangerous Goods by **Rail**

ADR → *European Agreement concerning the International Carriage of Dangerous Goods by **Road***



MATERIAL TRANSPORTATION - FLOW





CLASSIFICATION



Category A (*)

- Infectious substances which cause disease in humans or both in humans and animals shall be assigned to **United Nations number UN 2814**

The proper shipping name for **UN 2814** is:
“**INFECTIOUS SUBSTANCE, AFFECTING HUMANS**”

- Infectious substances which cause disease only in animals shall be assigned to United Nations number **UN 2900**

The proper shipping name for **UN 2900** is:
“**INFECTIOUS SUBSTANCE, AFFECTING ANIMALS only**”

(*) WHO - Guidance on regulations for the Transport of Infectious Substances



CLASSIFICATION



Category B (*)

- Infectious substances in Category B shall be assigned to **UN 3373**

The proper shipping name of **UN 3373** is:

“BIOLOGICAL SUBSTANCE, CATEGORY B”

Followed by the words: **DIAGNOSTIC (or CLINICAL) SPECIMEN**

Exempt human or Animal specimen *(not further treated in this presentation)*

- Human or animal specimens that have a minimal likelihood of containing pathogens must be packaged appropriately to further minimize the risk of exposure.

The packaging **must be marked with the words;**
“EXEMPT HUMAN SPECIMEN” or **“EXEMPT ANIMAL SPECIMEN”**,
as appropriate



REQUIREMENTS - PACKAGING

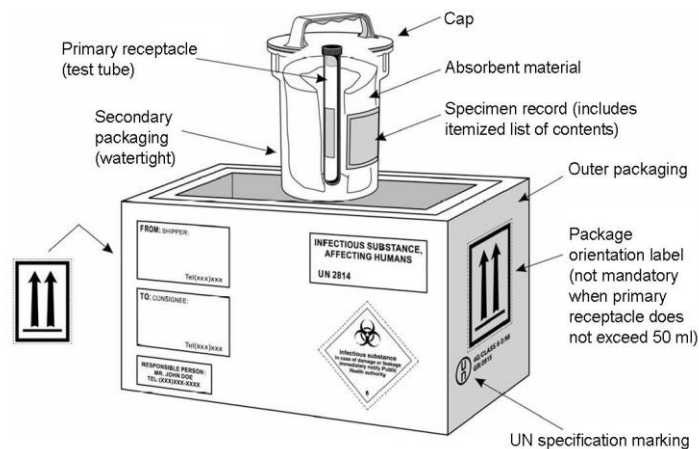


INFECTIOUS SUBSTANCE – BIOLOGICAL SUBSTANCE

Category A

Packaging Instruction (PI) 620

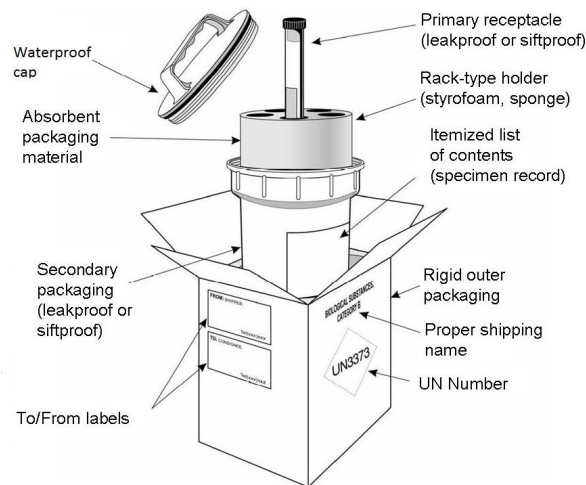
for specimens classified **UN 2814** and **UN 2900**



Category B

Packaging Instruction (PI) 650

for specimens classified **UN 3373**





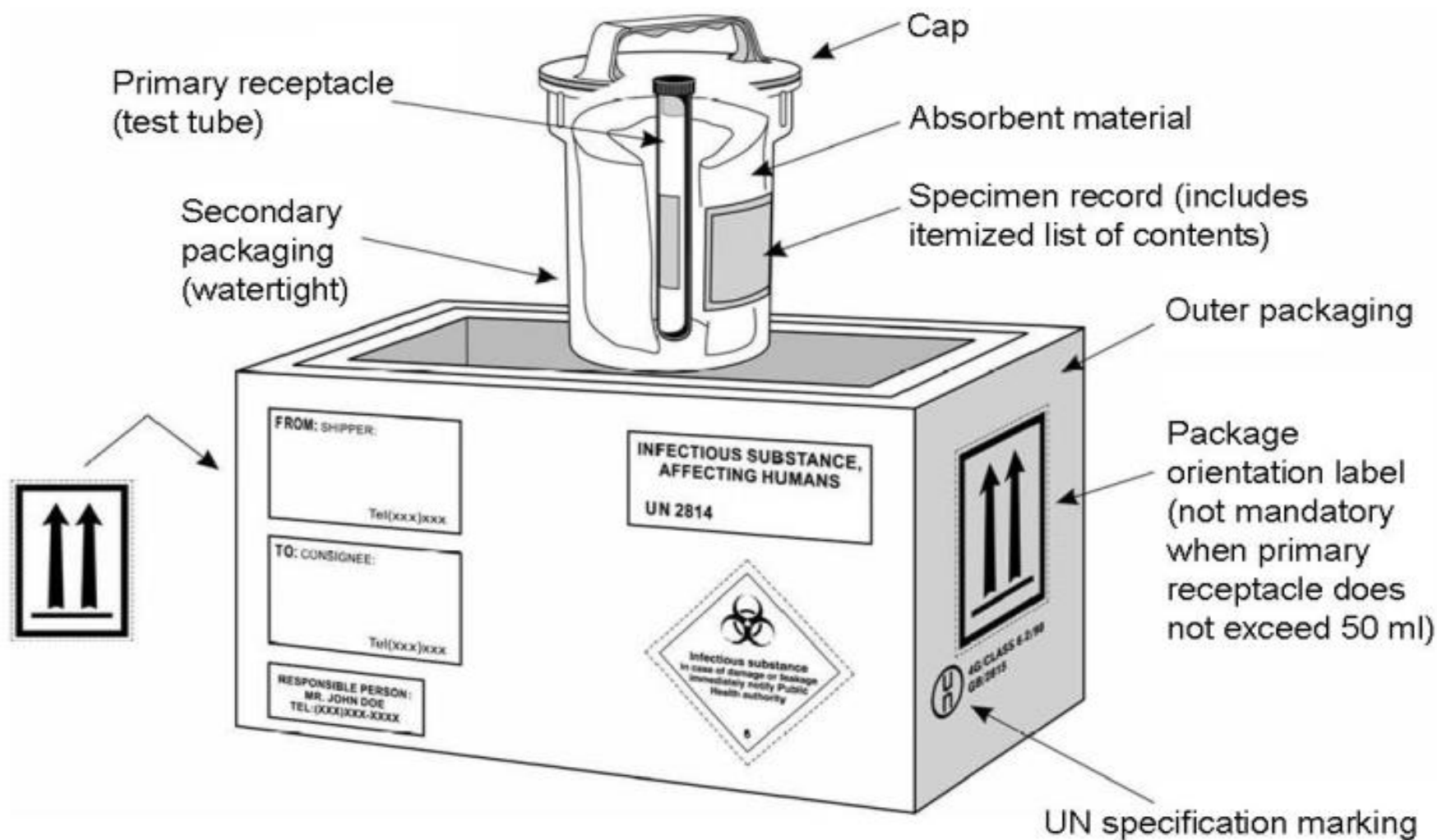
REQUIREMENTS - PACKAGING



UN 2814 – 2900 (PI 620) (*)		UN 3373 (PI 650) (*)
Inner packaging		
1	Leakproof primary receptacle(s);	<i>identical</i>
2	For liquid specimens, enough absorbent material to absorb the entire contents If multiple fragile primary receptacles are placed in a single secondary packaging, they shall be either individually wrapped or separated so as to prevent contact between them	<i>identical</i>
3	Leakproof secondary packaging;	<i>identical</i>
4	An itemized list of contents enclosed between the secondary packaging and the outer packaging	<i>identical</i>
Outer packaging		
Rigid, of adequate strength for its capacity, mass, intended use and must measure not less than 100 mm (3.9 inches) at its smallest overall external dimension		<i>See differences in the next slides</i>



REQUIREMENTS – UN 2900 PACKAGING



UN 2900 - PI 620



UN 2900 - Images (Labels and marking)



FROM: (Shipper)

Name of laboratory
Address
Responsible
Phone:
E-MAIL

1

TO: (Consignee)

Name of laboratory
Address
Responsible
Phone:
E-MAIL

2

In case of emergencies:

Responsible (receiver)
Phone number

3

INFECTIOUS SUBSTANCE
AFFECTING ANIMALS only
UN 2900

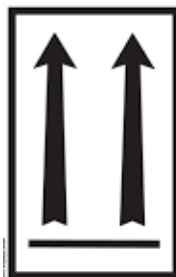
4

MANDATORY

- | | |
|------------------------------------|------------------------|
| 1 - Shipper data | 5 - Air Waybill number |
| 2 - Receiver data | 6 - Orientation, x2 |
| 3 - Contact for emergencies | 7 - UN code (marking) |
| 4 - Proper shipp. name & UN number | 8 - Biological hazard |

AWB

5



6



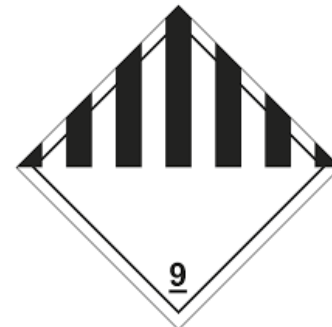
4G/CLASS 6.2/05
GB/2470

7



8

Note:
These Diamond shaped
label must have fixed
measures, of 50 mm
each side

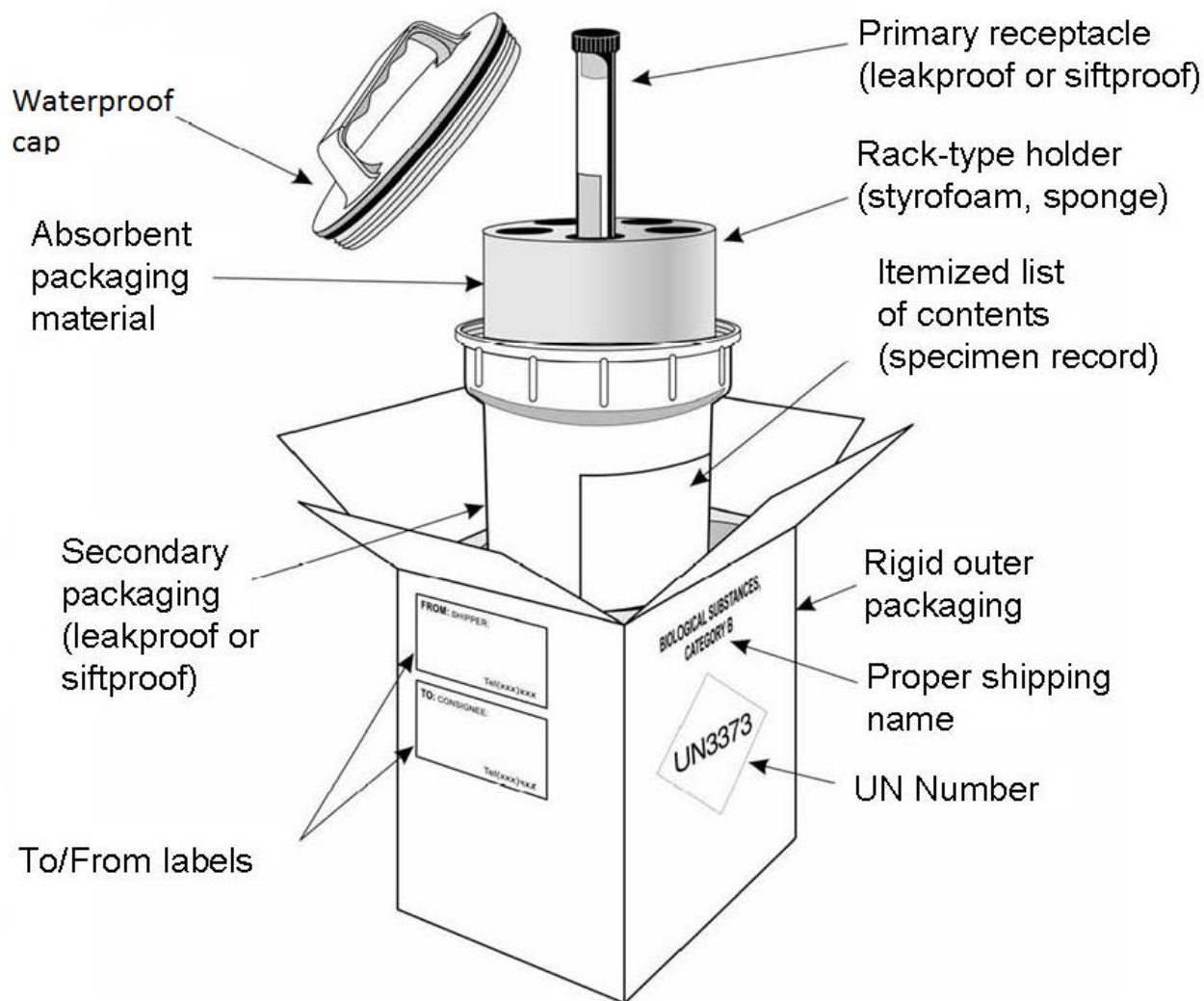


9

Label: Dry ice (UN 1845), if used



REQUIREMENTS – UN 3373 PACKAGING



UN 3373 – PI 650



UN 3373 - Images (Labels and marking)



1

FROM: (shipper)

Name of laboratory

Address (complete).....

Contact

Phone:

E-MAIL

2

TO: (consignee)

Name of the laboratory

Address

Contact person

Phone:

E-MAIL

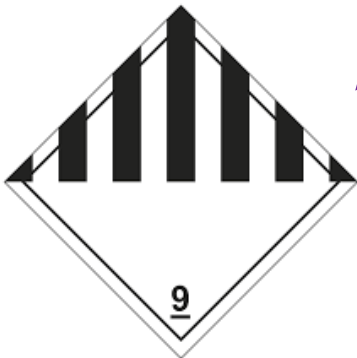
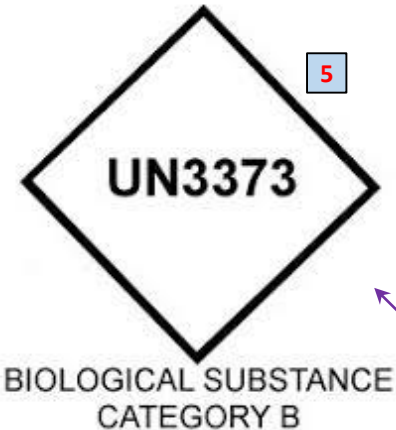
3

AWB

4

DIAGNOSTIC SPECIMEN

- MANDATORY
- 1- Shipper data
- 2 - Receiver data
- 3 - Air Waybill number
- 4 – proper name
- 5 - Proper shipp. name & UN number



Note:
These Diamond shaped
label must have fixed
measures, of 50 mm
each side

Label 8: Dry ice (UN 1845) if used



DOCUMENTATION



- **Itemized list of contents** (*)

Note: The list must be put either between the secondary and the outer package and into the documentation affixed to the outer package.

Item Technical Specification/Description of Goods	Quantity
Pot 1(Lung-Spleen-Trachea-Ceacum) of avian	1
Pot 2(Lung-Spleen-Trachea-Ceacum) of avian	1
Pot 3(Lung-Spleen-Trachea-Ceacum) of avian	1
Pot4 (Lung-Trachea-Ceacum) of turtledove	1
Total	4

The general value of the above mentioned is of 10 USD

This material has no commercial value.

For research purposes



Direction of Veterinary Service

- **Temperature store requirements**, where appropriate, together with relevant labelling on the outer package (UN number of the refrigerant, if listed as dangerous)



- **Customs invoice (proforma) and export certificate, if needed**
- **Import Permit**

The parcel must **ever** be accompanied by the copy of the «Import Permit» released by the Health Authority of the recipient country.

The permission:

- is released for the import of specific types of samples and pathogens
 - May have an expiry date and may establish specific conditions concerning transport, storage, use and disposal of samples and pathogens
 - Arrival Airport(s) are only those defined into the permission.
 - In Italy, Border Inspection Posts are responsible for import checks on samples and pathogens
- **Other information:**
Sample details (letter addressed to the recipient laboratory)



SHIPPER DECLARATION FOR CAT. A ONLY



- ✓ Mandatory for the shipping of Category A infectious substances
- ✓ A standard format is provided by relevant Regulations
- ✓ All the parts into the format must be compiled, or cancelled, if not relevant

SHIPPER'S DECLARATION FOR DANGEROUS GOODS Print Form

Shipper:

Air Waybill No.

Page of Pages

Shipper's Reference Number (optional)

Consignee:

For optional use for Company logo name and address

Two completed and signed copies of this Declaration must be handed to the operator.

TRANSPORT DETAILS

This shipment is within the limitations prescribed for: (delete non-applicable)

☐ PASSENGER AND CARGO AIRCRAFT ☐ CARGO AIRCRAFT ONLY

Airport of Departure:

Airport of Destination:

Shipment type: (delete non-applicable) ☐ NONHAZARDOUS ☐ HAZARDOUS

WARNING

Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties.

NATURE AND QUANTITY OF DANGEROUS GOODS

Dangerous Goods Identification						
UN or ID No.	Proper Shipping Name	Class (or Division) (Subsidiary Risk)	Pack- ing Group	Quantity and type of packing	Packing Inst.	Authorization
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Additional Handling Information

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. I declare that all of the applicable air transport requirements have been met.

Name/Title of Signatory

Place and Date

Signature (see warning above)



SHIPPER DECLARATION - UPPER PART OF THE FORM



Complete address of the Shipper
and the Consignee, with the name
of the responsible persons

Airport of Departure

Air Waybill number

Number
of pages

SHIPPER'S DECLARATION FOR DANGEROUS GOODS

Shipper Istituto Zooprofilattico Sperimentale della Lombardia ed dell'Emilia Romagna Via Bianchi, 9 25124 Brescia Italy RESPONSIBLE PERSON: Dr. X. XXXXXXXX - tel.: +39 987654321 (or +39 123456789 out of hours)		Air Waybill No 123.123456789 Page X of X Pages Shipper's Reference Number (optional)			
Consignee Institute for Animal Health, Pirbright Laboratory Ash Road - Pirbright, Woking Surrey GU 24 0NF-UK Person responsible for shipment: Dr. Tel.: +44 123456789 Person Responsible for Shipment:		WARNING Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties.			
Two completed and signed copies of this Declaration must be handed to the operator.					
TRANSPORT DETAILS					
This shipment is within the limitations prescribed for: (delete non-applicable) <table><tr><td>PASSENGER AND CARGO AIRCRAFT</td><td>CARGO AIRCRAFT ONLY</td></tr><tr><td></td><td>XXXXX</td></tr></table>	PASSENGER AND CARGO AIRCRAFT	CARGO AIRCRAFT ONLY		XXXXX	Airport of Departure MILAN
PASSENGER AND CARGO AIRCRAFT	CARGO AIRCRAFT ONLY				
	XXXXX				
Airport of Destination LONDON	Shipment Type (delete non-applicable) NON-RADIOACTIVE XXXXXX				

Airport of Destination

Delete with XXXX the non-applicable



SHIPPER DECLARATION - LOWER PART OF THE FORM



UN number of dangerous material in the package

Risk Class for dangerous materials

Number of items and quantity

Packing Instruction

NATURE AND QUANTITY OF DANGEROUS GOODS						
Dangerous Goods Identification						
UN or ID No.	Proper Shipping Name	Class or Division (Subsidiary Risk)	Packing Group	Quantity and Type of Packing	Packing Instructions	Authorization
UN2900	Infectious substance, affecting animals only (swine vesicular disease virus), liquid	6.2	-	1 bio-pack for 48 mL	602	
UN1845	Carbon dioxide, solid (dry ice)	9	III	5 kg Over packed used	904	

Additional Handling Information: prior arrangements as required by the IATA dangerous good regulations 1.3.3.1 have been made

Emergency Telephone Number: 24h emergency tel. +39 XXXXXXXX ask for Dr. X. XXX (during working time +39 XXXXXXXXXX)

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to the applicable international and national governmental regulations. I declare that all of the applicable air transport requirements have been met.

Name/Title of Signatory: Dr. XXXXXXXXXXXX Scientific Officer

Place and Date: Brescia, XX/XX/XXXX

Signature:

Name and phone number of the Responsible for emergencies

Name of Shipment Responsible, date and Signature



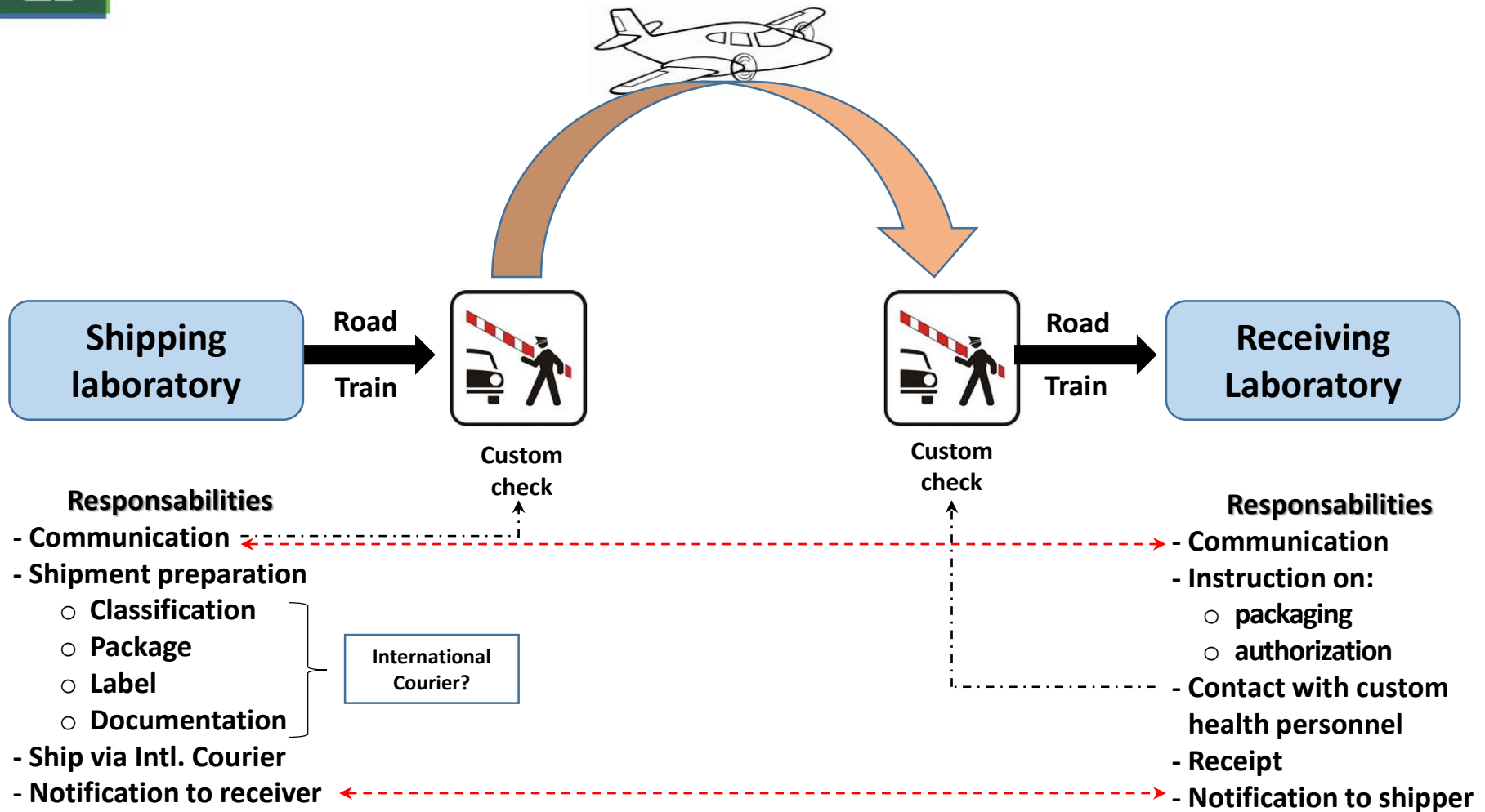
CRITICAL ISSUES



- Poor contact between laboratories (sender - consignee)
- Lack of awareness of the regulations
- Lack of package suppliers
- Lack of training opportunities (or too expensive)
- Shipments too expensive
- Shipment delayed with samples that have lost their viability
- Box refused by the courier with no other alternative or by the pilot
- Package destroyed by customs or border agencies



MATERIAL TRANSPORTATION - FLOW



Courier Responsibilities

Provide the consignor information on the correct packaging, with necessary travel documents and instructions for their compilation - Arrange with the consignor the transport route - Keep shipping documents - Make sure that the conditions of the package are maintained during the journey - Notify the consignor of possible shipping delays.



CRITICAL ISSUES



REPACKING BY THE COURIER



1



2



3

Pictures 1, 2 and 3 show the effect of the repacking operated by the courier. In picture 1 and 2 (same package) the only visible label is that of «Proper shipping name» and UN number (3373) while in picture 3, none at all

INCOMPLETE OR WRONG TRAVEL DOCUMENTS

On another occasion, a shipping account was used for which an import authorization was not available. The shipment was blocked at a German airport and, after several vicissitudes, the parcel was started to be destroyed.



RACCOMANDATIONS



- **Develop a working relationship between those involved – the sender, the carrier and the receiver - in order to provide for safe and expeditious transport of materials**
- **Ensure the correct classification of the shipping material (UN code)**
- **Design the Packaging of infectious substances for transport in order to fully comply the local, National and International Regulations**
- **Make sure that the documentation is clear and complete, consistent with the chosen UN code;**
- **Contingency planning for the availability of containers (with labels and marking), courier, refrigerants ecc.**
- **Preferably rely on International courier company(es) specialized in infectious substances transport (trained personnel)**



ABOUT THE COSTS.....



UN 3373 → between € 200 and € 400

(Depending on the distances, weight and presence/absence of dry ice)

Couriers: International couriers like DHL, TNT, etc. (Trained personnel)



UN 2900 → between € 1000 and € 2000

Couriers: World Courier, DGI (Dangerous Goods International), etc.

These couriers offer a complete service (packaging and labeling included)



THANKS FOR THE ATTENTION

SECURITY AND SAFETY

ARE COSTS

THAT REPRESENT

A SAVING



ISTITUTO ZOOPROFILATTICO SPERIMENTALE
DELLA LOMBARDIA E DELL'EMILIA ROMAGNA
"BRUNO UBERTINI"

ENTE SANITARIO DI DIRITTO PUBBLICO

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