

## Freight Forwarders Training Courses

for Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Tajikistan, Turkmenistan, Ukraine, Uzbekistan

### Module 4 Air Transport



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## 4.1 General Conditions of Carriage

### Learning objectives

The student should have knowledge on the main international organisations and conventions related to air transport.

The student should understand the general liability scheme of carriers in air transport.

The student should be aware of the special regulations and handling issues in relation to dangerous goods.

The student should understand the difference between an agent and a consolidator.

### 4.1.1 International Organizations

#### Learning objectives

The student should understand what IATA stands for, its main purpose and activity, organization structure and the membership of IATA.

The student should also understand what ICAO refers to and its main purposes as well as activities.

There are a few international organizations in relation to carriage of goods by air. As far as the private sector is concerned, the International Air Transport Association (IATA) is of the utmost relevance among those organizations.

#### International Air Transport Association (IATA)

The IATA is an association of airlines headquartered in Montreal, Canada. It was formed in April 1945 in Havana, Cuba, as a successor to the International Air Traffic Association, which was founded in The Hague in August 1919, the year when the first international scheduled services started. At its founding, IATA had 57 Members from 31 nations, mostly in Europe and North America. Today it has over 270 Members from more than 140 nations around the globe.

The membership of IATA contains the most important international airlines. Through these airlines, governments also wield considerable influence in IATA, and vice versa.

[www.iata.org](http://www.iata.org).

The goals of the IATA are defined as follows in the statutes:

- To promote safe, scheduled and inexpensive air transport for the benefit of all nations of the world, to help in the development of air commerce and to study all the problems that connect with the above.
- To supply all the means necessary for the cooperation of the airline companies that directly or indirectly serve the international air transports.
- To cooperate with the International Civil Aviation Organization (ICAO).

The IATA also regulates the shipping of dangerous goods and publishes the IATA Dangerous Goods Regulations manual. The IATA Dangerous Goods Regulations is a globally accepted field source reference for airlines shipping hazardous materials.

### **Membership**

IATA is an open organization, comparable to a trade association.

Only companies can qualify for IATA membership. The companies must operate one or more scheduled aviation services and are based in countries that may be members of the International Civil Aviation Organisation (ICAO).

There are two types of members at IATA: Active members and associate members.

Active members are airlines that operate scheduled flights for passengers, freight and/or mail between the territories of two or more countries. The requirements for an active member therefore can be concluded as: the traffic must be international and the flights must take place regularly.

Associate members are the airline companies that operate domestic flights only.

### **Organisation**

IATA is organised on the basis of committees. Examples are:

**Financial Committee:** The Financial Committee occupies itself mainly with maintaining unity in the settlement of accounts between companies. The main result has been the establishment of the IATA Clearing House that is based in Geneva. Clearing House is a special bank for airlines that have joined the IATA (not all companies have joined) where all current debits and credits between the companies are cleared.

Attention is also given to problems of statistics, insurance and tax.

As far as freight collection is concerned, all is done via a specialised system i.e. Cargo Account Settlement System (CASS). CAAS was developed by IATA with the aim to simplify reporting of cargo sales and settling of accounts between cargo agents and carriers. Both IATA and non-IATA carriers are eligible to participate in the system.

Enforcement Office: In order to check whether the IATA members do observe the various rules and agreements, IATA established the Enforcement Office. The appointed enforcement officers travel in a specific area. Fines will be imposed if it is found that an airline acts contrary to the rules, for example the airline does not calculate excess baggage or applies an incorrect cargo rate. The amount of fines varies from \$1,000.00 to over \$50,000.00.

### **International Civil Aviation Organization (ICAO)**

The ICAO was founded provisionally at an international meeting in Chicago on the 1st of November 1944. ICAO is based in Montreal, Canada.

Only governments of various countries can join ICAO and become a member. [www.icao.org](http://www.icao.org)

The aim of the ICAO is:

- To promote transport by air, international treaties, and to study subsidies, rates, cost prices etc.
- To control air traffic, study airports, flight routes, traffic control, navigational aids, communication systems, the international organisation for the dissemination of weather reports, logbooks, accidents; the requirements to be set for flight personnel and flying equipment, registration etc.

Different from the maritime transport where the principle of “free ocean” dominates, civil aviation has been a government matter from the onset. (Note: Limitations have already been imposed in sea transport as well in the form of territorial waters, flag discrimination, cabotage etc.)

### Questions

1. What is the function of the mentioned organisations / conventions? Please indicate.

Cooperation between airlines on e.g. safety and economical issues	IATA
Cooperation between governments on e.g. procedures, Traffic control, accidents	ICAO
Agreement between governments on e.g. documents, liabilities	Warsaw Convention

2. Which of the statements below is incorrect?

- a. Both IATA and ICAO promote the transport by air with headquarters in Canada
- b. IATA co-operates member airline companies in international air transport
- c. IATA is organised on the basis of committees
- d. ICAO is open to airline companies

(d)

3. True or False?

Which activities must an airline operate in order to apply for IATA active membership?

- International scheduled flights for passengers (T)
- Domestic scheduled flights for passengers (F)
- International scheduled flights for cargo / mail (T)
- Domestic scheduled flights for cargo / mail (F)

#### 4.1.2 IATA Organization and Agency Agreement

##### **Learning objectives**

The student should be aware of the conditions for a forwarder to be an IATA cargo agent.

IATA's main purpose lies in the technical and commercial sector. Its technical duties were designed from the beginning to achieve safer, more regular and more economical air traffic. In the commercial sector, IATA's activities were expected to create the best possible conditions for all categories of customers.

For a forwarding company to be able to effectively engage in the air freight business, it should firstly register at IATA to become a registered IATA Cargo Agent.

##### **IATA Cargo Agent**

Cargo Agency Rules have been established to regulate the standards of business practice between IATA registered Cargo Agents and IATA member airlines. These rules also set forth the rights and obligations of both parties and the procedures applicable to forwarding companies seeking IATA Cargo Agent status.

In order to become an IATA Cargo Agent, the person or company should first submit an application in the form of written answers to a questionnaire. This questionnaire has been adopted by all airlines, and is part of the Cargo Agent Rules. Investigators, neutrally acting on behalf of IATA, will visit the sites indicated by the applicant.

There are qualifications required for the registration of an agent. Details of such requirements can refer to the IATA Cargo Agent Rules. The forwarding company usually must meet certain conditions regarding personnel, office size, location, clientele, turnover and solvency.

The essential requirements are:

- Qualified and duly trained staff, particularly with regard to the handling of dangerous goods;
- Sound financial standing;
- Suitable working premises and cargo handling facilities; and
- Active promotion and sale of international air cargo transportation.

An agent must further be appointed as a registered agent by individual airlines that regard the agent's business activities as being of value to them. The IATA member airlines therefore determine which forwarders qualify to sell carriage by IATA. The airlines then will deliver a set of pre-numbered and assigned blank Air Waybills, or simply air waybill numbers to the agent for their exclusive use.

In order to ensure that all registered cargo agents on the official Cargo Agency List continue to meet the criteria, periodic reassessments are conducted. In addition, any registered agent undergoing changes to its financial or legal structure, name, ownership or premises is required to promptly notify IATA. Certain changes may affect the registered status of an agent and may be subject to review procedures under the Cargo Agency Rules.

#### **IATA agency agreement**

When applying for the registered IATA Cargo Agent, the applicant will receive a copy of the Cargo Agency Agreement from IATA for pre-signing. The Agreement will subsequently return to IATA to speed up the formalities in anticipation of final approval. Upon approval, the Cargo Agency Agreement will be countersigned by IATA, acting on behalf of its Member Airlines and will become valid between the parties on the effective date of approval. IATA holds the original of the Agreement and the duplicate is returned to the Agent.

This cargo agency agreement is the contractual instrument binding the Agent in its relations with IATA Airlines. A person legally authorized to sign on behalf of the Agency should therefore execute the Agreement following witnessing. Should there be a requirement in the national law of the Agent's country relating to authentication of contractual documents, then the signature should be so authenticated / notarized.

Once an Agent has been registered and has signed an Agreement, IATA Member Airlines may appoint, grant credit facilities and air waybill stocks to the Agent. Most commonly Airlines appoint Agents globally by a method



known as a deposition of a Statement of General Concurrence with IATA. Appointment may also be by means of individual certificates of appointment issued by the Airlines concerned directly with the Agents. There is no obligation for an individual Member Airline to appoint a registered Agent or provide it with its air waybill stock. Giving notice in accordance with the Agreement may terminate an individual appointment of an Agent, by a Member. Air waybills may be withdrawn at any time, since these are the property of the Airlines. An Agent who considers itself aggrieved following termination of appointment by an Airline may seek recourse with the Agency Commissioner.

### Questions

*1. In order to qualify for an IATA cargo agent, the forwarding company should meet certain requirements. The following elements will be all looked into by IATA in the application except:*

- a. The nationality of the company or the company's legal representative
- b. Staff qualification and training
- c. Satisfactory financial and credit standing of the company
- d. Suitability of premises and cargo handling facilities

(a)

*2. On signing the cargo agency agreement, the cargo agent and member airlines of IATA are bound to the agreement, which forms the contractual relations between the parties. Which statement(s) below are correct?*

- a. Once signing the agreement, the airline is obliged to appoint a registered agent
- b. The airline can provide air waybills to or withdraw air waybills from the agent
- c. The airline can appoint the agent via deposition of a Statement of General Concurrence with IATA, or do it by individual certificates of appointments directly to the agent
- d. The airline can grant credit facilities and air waybill stocks or numbers before the agent has been registered and signed the agreement

(b & c)

### 4.1.3 Warsaw Convention and the Warsaw Convention System

#### **Learning objectives**

The student should have knowledge of the history, development and amendments of the Warsaw Convention as well as the Warsaw Convention system.

The student should further be aware of the main differences between Montreal agreement (MP4), The Hague Protocol 1955 and Warsaw Convention 1929 in terms of carrier's liability.

#### **The Warsaw Convention 1929**

The Warsaw Convention is a multilateral treaty, administered by the International Civil Aviation Organization (ICAO). The convention applies to international transport conducted by air carriers via the national law of the signatory countries. It does not apply therefore, to domestic air transport.

#### **Origin and background**

Warsaw Convention -The Convention for the Unification of Certain Rules to International Carriage by Air – is the first of its kind in international air transport, introduced in the conference held in Warsaw, Poland in 1929. The conference wanted to establish a uniform system of, though limited, liability for air carriers in the event of international accidents in order to protect the interests of international air carriers.

By 1929 the airline industry was in its infancy. The Warsaw Convention therefore unifies the rules in respect to carrier's liability limits and defences, ticketing, transport of baggage and goods as well as fast recovery for passenger's claims.

The Warsaw Convention has two primary goals:

- To establish uniformity in the aviation industry with regard to the procedures dealing with claims, the law applicable to such claims, and with regard to the documentation such as tickets and waybills
- To limit air carrier's potential liability in the event of accidents.

#### **Liability scheme in Warsaw Convention**

The Warsaw Convention of 1929 gives the air waybill a legal status as prima facie evidence of the transport contract. The consignor will make out the air waybill. The consignor is also responsible for the correctness of the statements related to the cargo. Detailed requirements as to what is to be contained in the air waybill are also set forth in the Convention.

A fault liability regime was established in the Warsaw Convention for the air carriers, including his servants and agents. The carrier is liable for the damage to and/or loss of the cargo, as well as the damage occasioned by delay, unless he can prove that the damage was caused by an error in piloting, in the handling of the aircraft, or in navigation and that, in all other respects, he and his agents have taken all necessary measures to avoid the damage.

The carrier's liability is limited to 250 francs Poincaré (approximately US\$20 or 17SDRs) per kilogram of the cargo. There are exceptions to the liability limit. One is related to high valued cargo, in case the shipper/consignor declares the (high) value of the cargo at delivery and as such, a special fee against the goods is paid. Another example where the carrier can lose the protection of the liability limit is when the damage is caused by the wilful misconduct of the carrier.

For some more information about the provisions of the Warsaw Convention, please refer to Annex 1.

### **Development**

The coming of the Warsaw Convention, however, did not achieve the uniformity and harmonization in air transport as it originally intended. As time went by and the air industry began expanding, debate and criticism of the Convention occurred throughout the world. One often heard criticism was about the carrier's liability limits. All these led to constant adjustments and changes to the 1929 Convention. In 1955 the first effort to significantly adjust the Warsaw Convention was made, the result of which was the Hague Protocol.

Over the years, the Warsaw Convention has had no less than six official amendments, protocols and modifications. In terms of cargo transport, the related documents are the Hague Protocol of 1955 and the Montreal Protocol No.4 of 1975 (MP4).

### **The Hague Protocol 1955**

The Hague Protocol in 1955 was the first amendment to the Warsaw Convention.

The most important change by the Hague Protocol was a doubled limit of recovery for passengers, up to 250,000 francs Poincaré now.

The Hague Protocol did not change the liability limits for carriers in the event of cargo damage or loss, but simplified the requirement of documents of carriage, and extended its application to the air carrier's agents and servants.

The Hague Protocol also clarified and gave a more precise meaning of “wilful misconduct”, where the carrier is exempted from the limitation of liability.

The Hague Protocol was signed by the U.S. but the latter did not ratify it due to the low liability limits of the carrier towards passenger’s damage.

#### **Montreal agreement (MP4)**

Montreal Protocol 1975 is another effort in amending the Warsaw Convention of 1929. There were four protocols adopted, namely Montreal Protocol 1 (MP1), Montreal Protocol 2 (MP2), Montreal Protocol 3 (MP3), and Montreal Protocol 4 (MP4). MP4 is the most relevant in terms of cargo transport, while the other three simply replaced the unit of Franc Poincare in previous protocols and the convention, by

#### **Special Drawing Rights (SDR).**

Franc Poincare was defined in 1929 as such that it consists of 65.5 milligrams of gold at the standard of fineness of nine hundred thousandths’. Difficulties arose when the official gold price, as expressed in US dollars, were different from the price in the free market price where gold was actually traded. Cases showed that different courts adopted either official gold prices or free market prices in dealing with the carrier’s liability. To eliminate such anomalies the SDR was introduced.

Special Drawing Rights is a fixed sum based, since January 1, 1981, on a ‘basket’ of the values of five currencies: US Dollar, UK Pound, French franc, German Mark, and Japanese Yen. SDR was introduced by the International Monetary Fund in 1981.

MP4 is based on the Hague Protocol 1955. Aside from the change of Franc Poincare to SDR, MP4 further modernized the cargo provisions.

The MP4 established a strict liability system for the carrier, replacing the faulty liability system in the Warsaw Convention 1929 and in the Hague Protocol 1955. According to MP4, the carrier will be held liable for the damage to and/or loss of cargo regardless of fault in the international carriage of cargo. Only in very limited cases, will the carrier be exempted from liability, such as in an act of war or an act of public authority, or loss which resulted from the inherent defect of cargo or the defective packing by the consignor.

The liability limits in MP4 remain the same, i.e. 17SDRs (about US\$20) per kilogram. The limit is unbreakable except in the case where the cargo has a special declared value at delivery by the consignor, who paid also a supplementary sum for the high value of the cargo.

The MP4 also simplified the formalities of the air waybill, allowing them to be replaced by computer records. This is a step forward towards the development of the air transport into a new era, where the costly paperwork can be possibly eliminated. MP4 also reduced the list of particulars on an air waybill, and eliminated the sanctions for omissions of particulars, thus maintaining the liability limitation in favour of the carriers.

#### 4.1.2 Liability of the Airlines

##### **Learning objectives**

The student should understand the concepts of the fault liability system and strict liability system, and the differences between the two.

The student should be also aware of the evolvement of the liability limits of air carriers in the Warsaw Convention system.

From the Warsaw Convention 1929 to the Hague Protocol 1955, and further to the Montreal Protocol 4, the liability system of the airlines has since then uniformed, and changed from a “fault liability” to “strict liability”, or so called “risk liability”.

It should be also noted that over the years, the main issue in relation to the arguments or disagreements internationally or over international convention, was about the airlines liability.

##### **Uniformed liability scheme**

The Warsaw Convention set down a uniformed liability scheme for the air carriers for the first time.

Uniformity in liability scheme is very useful and effective in preventing claimants or carriers from choosing the most favourable governing laws. By providing a uniformed system, it avoids the legal conflicts that may arise from the national governing laws applicable to different nations concerned in the international transport of cargo.

##### **Fault liability system**

The Warsaw Convention 1929 and the Hague Protocol 1955 adopted a ‘fault liability’ regime, which means that the airlines should not be liable for damage unless the damage is caused by the fault of the carrier.

This fault liability however, is associated with a reversed burden of proof. It is therefore the air carrier, instead of the shipper or consignee, who should prove that the carrier is free from fault in regard to the specific case of damages caused to, or loss of cargo during the transport.

The carrier is not liable if he proves that he and his employees have taken all necessary measures to avoid the damage, or that it was impossible for him or

his employees, to take such measures. Under the Warsaw Convention, the carrier is not liable if he proves that the damage was occasioned by negligent pilotage or negligence in the handling of the aircraft or in navigation and that, all necessary measures to avoid the damage have been taken. This exception has slightly changed in the Hague Protocol 1955.

### **Strict liability system**

Strict liability system holds the carrier liable in case of cargo damage or loss, regardless of the carrier's fault. This means, the carrier will be liable also in cases where he bears no fault or blame, for instance in the event of damage or loss of cargo resulting from hijacking or sabotage. Liability is not dependent on negligence or intent. The causal link between the fault and the damage is no longer required.

The strict liability system is therefore a higher risk system than the fault liability system.

MP4 introduced the strict liability system to airlines with respect to cargo transport. Meanwhile the MP4 made the limitation unbreakable, even in the case of gross negligence by the carrier or his agents or servants.

Strict liability system is so far the widest applicable system in air transport, both in cargo and passenger transport.

### **Liability limits**

The limitation of air carriers' liability remains unchanged in the Warsaw system, from the Warsaw Convention 1929 to The Hague Protocol 1955 and Montreal Protocol 4. The limit is set at 250 Francs Poincare, or 17SDRs which are at the same value (approximately \$20 these days).

### Questions

1. *The purpose of the Warsaw Convention in 1929 was to:*

- a. Uniform the claim procedures in aviation
- b. Uniform the documentations such as air waybill used in air transport
- c. Limit the air carrier's potential liability in the event of accidents
- d. All of the above

(d)

2. *The liability systems in the Warsaw Convention, The Hague Protocol 1955 and Montreal Agreement MP4 are, respectively:*

- a. Fault liability, strict liability, fault liability
- b. Strict liability, fault liability, fault liability
- c. Fault liability, fault liability, strict liability
- d. Fault liability, strict liability, strict liability

(c)

3. *True or False?*

*Since 1929 the Warsaw convention system has experienced many modifications and amendments. Judge whether the statement below is true or not true.*

- a. In terms of cargo transport, the relevant documents in the Warsaw convention system are the Hague Protocol 1955, MP4 1975 and the Warsaw Convention 1929. (T)
- b. The limitation of the carrier's liability per kilogram among the Warsaw convention system remains unchanged. (T)
- c. The employees and agents of the airline bear different liabilities from the airline company itself. (F)
- d. According to MP4, the carrier will be held liable for the damages to and/or losses of cargo in international transport, regardless of fault. (T)

4. *What is the liability limit per kilogram of the air carriers in case of cargo damage or loss in the Warsaw convention system?*

- a. 17 SDR
- b. Approximately \$20
- c. 250 francs poincare
- d. All are correct

(d)

#### 4.1.4 Possibilities of Increasing Liability of Airlines

**Learning objectives**

The student should be aware of the possibilities of increasing the liability of airlines in the modern world. The student should also have some knowledge of the Montreal Convention 1999 as well as the air carrier's liability scheme in the convention.

It is understandable that the more developed a society becomes the more willingness there is to look sympathetically at a wider spectrum of complaints because of the development of democracy and greater protection of consumers. There is no exception in the airline industry. With the airline industry growing and more application of high technologies, the air carriers are facing increasing pressure from the cargo interests and passengers who demand a higher and wider liability.

In respect to passenger transport, the Warsaw Convention in its amendments and protocols has continuously increased the carrier's limits of liability and later on, introduced the strict liability system. Regarding cargo transport, the liability limits remain unchanged though the strict liability system was introduced in the Montreal Protocol of 1975.

**Montreal Convention 1999**

Despite the increasing liability limits and the introduction of the strict liability system, the carriers are still facing more and more pressure from the cargo side. This resulted in the Convention for the Unification of Certain Rules of International Carriage by Air (Montreal Convention 1999), an initiative from ICAO. The Montreal Convention has combined and inherited those provisions from effective and ineffective documents under the Warsaw System as well as from other international agreements and regulations. The Convention adopted the strict liability system for both cargo and passenger transport, though the liability limits for cargo transport still remain at 17 SDRs per kilogram (approximately US\$ 20). The Montreal Convention 1999 entered into force in 2003. The U.S also signed and ratified the Montreal Convention 1999.



### Liability increase trends

At the moment, the application of Montreal Convention is subject to the condition that both the departure country and the destination country are members of the convention. In case one of the two countries is not a state party to the convention, but a member of other international treaties such as the Warsaw Convention, according to a recent court case in the United States, the other convention should apply.

The ruling of this case indicated a lower liability exposure of the airlines, realizing that Montreal Convention has so far the highest liability scheme for the carrier. This may however, remain temporarily in light of the evolving needs of legal uniformity in world air industry and the increasing defectiveness observed from the Warsaw Convention system.

### Questions

#### 1. True or False?

- Strict liability system imposes a higher risk regime on the carriers than in the fault liability system (T)
- The Warsaw Convention 1929 for the first time uniformed the carrier's liability in air transport (T)
- In accordance with the fault liability system in the Hague Protocol 1955, the shipper or consignee shall prove that the cargo damage or loss is caused by the carrier or his agent's fault (F)

#### 2. Which statement below regarding the strict liability system is incorrect?

- a. Strict liability is also called risk liability
- b. Strict liability system holds the carriers liable even though the carrier did not do anything wrong in most cases
- c. So far in aviation strict liability is much less applied than the fault liability
- d. In MP4, in exchange for the strict liability, the liability limitation of the carrier is unbreakable even in the case of gross negligence by the carrier's agent

(c)

#### 4.1.5 Dangerous Goods by Air

##### **Learning objectives**

The student should be aware that specific regulations apply in respect of dangerous goods transport by air.

The student should also understand what DGR and ICAO TI stand for, with special attention paid to the compulsory requirements on shipper's declarations, labelling and handling, limited quantities, and restricted articles with regard to the air transport of dangerous goods.

*More information on dangerous goods can be found in Module 11 – Safety, Security and Dangerous Goods.*

Both ICAO and IATA have laid down regulations concerning the transport of dangerous goods by air. Respectively they are Dangerous Goods Regulations (DGR) from IATA and Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO TI's) from ICAO.

In business practice it is the DGR that is the most widely used. DGR is therefore known as a “field manual” version of the ICAO Technical Instructions. The reason is that the DGR is stricter in terms of requirements than the ICAO TI. Besides, the DGR comprises the text of ICAO TI's in addition to the additional requirements and information from IATA.

##### **IATA Dangerous Goods Regulations (DGR)**

IATA regulates the shipping of dangerous goods and publishes the IATA Dangerous Goods Regulations manual. The IATA Dangerous Goods Regulations (DGR) manual is a globally accepted field source reference for airlines shipping hazardous materials.

DGR is published annually with the latest rules on the air mode of dangerous goods from States, Operators and the ICAO. The IATA DGR contains 10 sections, subdivided into subsections and seven appendices.

The titles of the 10 sections are:

1. Applicability
2. Limitations
3. Classification
4. Identification
5. Packing

6. Packaging specifications and performance tests
7. Marking and labelling
8. Documentation
9. Handling
10. Radioactive material

IATA DGR further contains a list of dangerous goods in alphabetical order and in subsection 4.2. the DGR classifies the dangerous goods into 9 classes, like in the UN Model Regulations. The UN numerical list can be found in subsection 4.3. At the beginning of the list in subsection 4.1.6 an explanation of the data in the columns is given, as well as the references to the detailed provisions in the relevant sections and subsections. For a list of classifications of dangerous goods please refer to Annex 2.

### **ICAO-IT**

When ICAO was founded in November 1944 in the International Civil Aviation Conference, the Conference laid the foundation for a set of rules and regulations regarding air navigation as a whole which brought safety in flying a great step forward. During the conference the 52 participating countries signed the Chicago Convention. Annex 18 to the Convention agreed on the broad principles governing the international transport of dangerous goods. The Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO TI's) then included the detailed and technical requirements.

The ICAO TI's are based on material produced by the United Nations and for radioactive materials, the International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Material. Modifications are made to the system to take account of the peculiarities of air transport, while keeping in mind the need to ensure modal compatibility.

Due to the stricter requirements in the DGR, and that the DGR virtually has covered all the contents from ICAO TI, in practice the DGR is most widely used.

### **Shipper's declaration for dangerous goods compulsory**

With respect to dangerous goods, the shipper's declaration to the carrier, about the nature as well as the handling requirements of the goods, is compulsory.

In air cargo transport, it is the shipper's responsibility to prepare the information to be filled into the transport document, i.e. air waybill. In

comparison to other types of goods, the dangerous goods transport document to be prepared by the shipper should in addition carry or be accompanied by, a certificate or declaration that the shipment offered can be accepted for shipment and that the goods are properly packaged, marked and labelled, and in proper condition for transport in accordance with the applicable regulations.

The declaration should be signed and dated by the shipper. In failure of the proper and sufficient declaration, the carrier may be exonerated from liability in case of damage or loss caused to the cargo during transport which is the result from the improper handling of the goods due to the lack of information.

### **Labelling and handling of dangerous goods**

Specific labels and handling requirements are needed for dangerous goods. Dangerous goods labels are always displayed on packages and cargo transport units (i.e. containers, freight vehicles) which indicate the hazard(s) by means of colours and symbols of the enclosed substances, materials or articles.

Illustrations of labels, marks and signs can be found in the inner left side of the cover of DGR. An example is given in Annex 3.

Hazard labels indicating the primary or subsidiary hazard should also bear the class number in the bottom corner. Descriptive text on the labels is optional with exception of the labels for radioactive materials.

Handling of the dangerous goods should strictly follow the labels.

### **Restricted articles**

Dangerous goods are subject to different conditions for transport in the air, depending on the potential risks associated with the specific types of goods. Some dangerous goods have been therefore identified as being too dangerous to be carried on any aircraft under any circumstances. Some are forbidden under normal circumstances but may be carried with specific approvals from the States concerned. Some are restricted to carriage on all cargo aircraft.

Some examples:

- Explosives (1.1 – 1.6) are normally forbidden for carriage by air e.g. TNT, Dynamite or Torpedoes, etc.
- Most toxic gases (2.3) are forbidden for carriage by air; some are permitted though, e.g. aerosols of low toxicity, tear gas devices.

- Some toxic substances (6.1) are completely forbidden e.g. Bromoacetone.

### Limited Quantities

Packaging is the essential component in the safe transport of dangerous goods by air. The packing instructions normally require the use of UN performance-tested specification packaging. However these are not required when dangerous goods are shipped in Limited Quantities under the provisions of Limited Quantity "Y" Packing Instructions.

The quantity of dangerous goods permitted within these packagings is strictly limited by the Regulations so as to minimize the risk should an incident occur.

### Question

1. It is observed and predicted that the liability borne by the airlines will continue increasing in the air cargo sector. Montreal Convention 1999 is such an example. Which statement below about the Montreal Convention is incorrect?

- a. Montreal Convention 1999 is not yet in force
- b. Montreal Convention adopts a strict liability system, and the same liability limits at SDR17 per kilogram
- c. Montreal Convention not only has inherited the Warsaw convention system, but also combined provisions from other international regulations in regards to air transport
- d. If the place of departure is situated within the territory of a state party to the Montreal Convention, but the place of destination is not, the Convention does not apply.

(a)

### 4.1.6 Difference Between Agent and Contracting Carrier (Consolidator) in Liability

#### Learning objectives

The student should understand the meaning of an air cargo agent and a consolidator. The student should further understand the legal consequences of being an agent and a consolidator in air transport.

#### Air cargo agent and consolidator

For security reasons, these days all air cargo for transport should not be arranged directly with the airlines but via the air cargo agent. The airline appoints the air cargo agent. From a legal point of view, depending on the liabilities the agent assumes, there is the difference between a normal air cargo agent and a consolidator.

#### **Air cargo agent**

In order to be able to act as an air cargo agent, a forwarder must:

- 1) be recognised as such by the IATA;
- 2) be appointed by the airline.

The agent must prepare the shipment for transport, i.e. deliver it to the airline with the prescribed labels attached and together with the required documents, including the fully completed air waybill.

#### **Consolidator**

A forwarder whose business is to combine air cargo shipments from different senders is called a consolidator.

The consolidator determines the rates for the goods included in a consolidated shipment by him. In order to be attractive to senders, such rates will always be lower than the air cargo rates quoted directly by the airline company.

The consolidator supplies the sender with a so-called house air waybill (HAWB), i.e. a transport document issued by the consolidator himself to cover the entire transport (as proof of the carriage agreement and as proof that the shipment was accepted by him for carriage). The consolidated shipment is delivered to the airline by the consolidator together with an IATA air waybill (MAWB: master air waybill). As far as the airline is concerned the consolidator acts as the sender; he will address the shipment to a forwarder at the destination airport, who will split the shipment in accordance with the house air waybill and have it delivered or pass it on (breaking-bulk agent).

Advantages of consolidation to senders:

- Lower freight costs for the airlines;
- Transport of more cargo in fewer shipments and consequently lower handling costs, administration costs etc.

Consolidation can have the drawback that the total transport time from home to home is longer and the shipments are therefore longer under way than if the transport had taken place directly as air cargo. It also increases the costs

at the destination because of the transfer costs and the break-bulk fee, i.e. to undo the consolidation.

**Liability borne by the agent and consolidator**

A cargo agent is essentially the traditional agent in legal terms. The agent acts on behalf of the principal, and the principal takes responsibility and liability resulting from the actions taken by the agent within his authorized limits.

The cargo agent functions as a middleman, facilitating the transport process and assisting the cargo owner or air carriers with regard to their duties in relation to the air transport contract.

A consolidator however, assumes the position of a shipper as opposed to the air carrier and as a result, the consolidator becomes a party to the transport contract with the carrier (as evidenced by the IATA air waybill from the airline). Therefore, the consolidator bears the responsibility to pay tariff to the carrier, and to fulfil all other duties as may duly arise from the contractual relationship, which is usually undertaken by the real shipper.

On the other hand, to the real shipper the consolidator acts as a carrier. Hence the consolidator assumes the responsibility and liability as a carrier in the contractual relationship with the shipper (as evidenced by the house air waybill from the consolidator).

It is important for a consolidator to balance and harmonize its liabilities derived from the two contracts with the shipper and the carrier respectively. In special cases the consolidator may bear a higher liability towards the shipper, while the carrier exempts himself from certain liability or is entitled to certain liability limitation.

**Questions**

1. *The regulating body in air transport of dangerous goods includes:*

- a. IATA
- b. ICAO
- c. Warsaw Convention
- d. None of the above

(a & b)

2. *How many classes of dangerous goods are there for air cargo?*

- a. 7
- b. 9
- c. 12
- d. 10

(b)

3. *True or False?*

- a. It is compulsory on the shipper to declare the dangerous nature of the goods. (T)
- b. Dangerous goods have specific labels, and handling of dangerous goods shall strictly follow such illustration. (T)
- c. ICAO-TI and DGR are the regulations on dangerous goods from ICAO and IATA respectively. Both regulations are equally important and widely applied in business practice. (F)
- d. No matter how dangerous it is, dangerous goods can always be transported by air as long as they are of a limited quantity. (F)

4. *The airline can receive cargo for air transport from the following parties, except*

- a. The shipper
- b. A forwarding company functioning as consolidator
- c. A forwarder
- d. IATA registered cargo agent

(a)



5. *The main difference between an agent and a consolidator is that:*
- The agent is a registered agent at IATA
  - A consolidator is usually larger in company size and business scales than an agent
  - A consolidator enters into a direct contractual relationship with the carrier and bears the responsibility as the shipper, while an agent only acts on behalf of the shipper
  - The agent facilitates the transport process in air transport while the consolidator does not

(c)

6. *Among the descriptions of consolidator and consolidation, which one is incorrect?*

- The legal position of a consolidator can be described as the shipper to the airline, and the carrier as opposed to the real shipper/sender
- The consolidator issues the house air waybill to the sender
- Consolidation has the advantage of a lower freight cost to both the sender and the airlines
- Consolidation has the disadvantage that less cargo will be transported in the same shipment and consequently the handling costs will increase

(d)

## 4.2 Most Used Aircrafts and Air Pallets

### **Learning objectives**

The student should know the types and specifications of most used aircrafts.  
The student should further have knowledge of the types of air loading devices used the most.

### 4.2.1 The Most Used Aircrafts (Passenger and Feight)

#### **Learning objectives**

The student should understand the main types of aircrafts that are used for cargo transport.  
The student should also have knowledge of the main specifications as well as loading capacity of the above aircrafts.

Air cargo can be carried in either a passenger aircraft or a dedicated air cargo plane.

### **Passenger aircraft**

Air cargo on a passenger aircraft is transported in the belly of the aircraft, which is located below the passenger cabin.

The belly is accessible from the outside by means of a loading hatch. Lighting, heating and air conditioning are provided, so live animals can be transported as well.

The belly must firstly accommodate the passengers' baggage and airmail. The remaining space is available for the air cargo.

N.B: About 50% of air transportation is done in passenger aircraft.
---

### **Cargo plane**

In cargo planes, the freight is also loaded in the belly, but mainly in the cabin and therefore consists mainly of large and heavy items.

To this end, these planes are fitted with a reinforced floor and wide doors. In addition, most cargo planes are equipped with a pallet system. First, the cargo is loaded on pallets in the warehouse and tied down with nets and belting. Then these loaded pallets are lifted to the cabin by a high loader, pushed further into the cabin on rollers, which are fitted in the cabin and stowed in place.

In cargo planes which do not have a pallet system, the cargo is simply loaded into the cabin. In order to prevent shifting during the flight, the cargo must be secured by means of nets, belting and ropes.

### **Combi plane (mixed plane)**

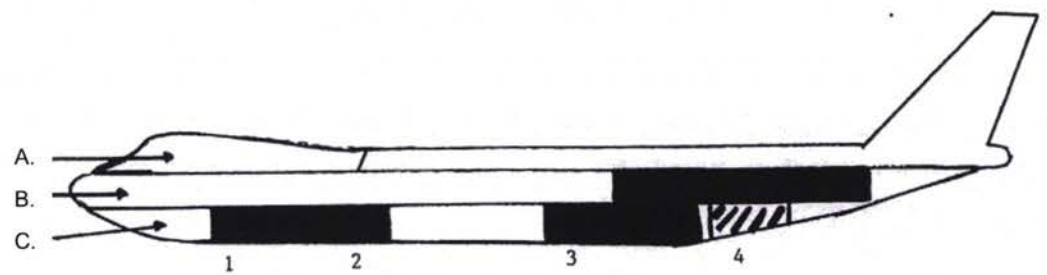
A combi is, as the name indicates, a combined passenger and cargo plane (Boeing B747M = Mixed). Unlike in the DC-8M used before, a fixed number of seats has been removed from the rear in the B747M, sufficiently to make room for at most 13 pallets. Naturally, these two sections are separated by a bulkhead.

**Cargo planes, fitted with roller tracks for pallet loading:**

Boeing 747	-	in the belly
Boeing 747M (Combi)	-	in the belly + part of the cabin
DC-10	-	in the belly
Airbus A310	-	in the belly

In the following figure, the schemes of different types of aircrafts as mentioned above are shown:

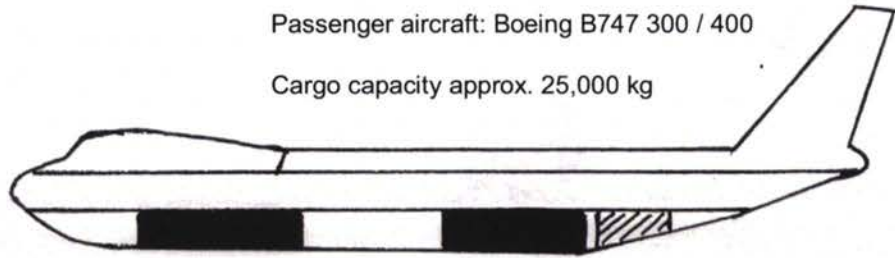
**Combi aircraft:** Boeing B747 300 / 400



- C. Bellies: cargo holds 1 – 4;  
holds 1 + 2 in front of wing; 3 + 4 behind wing;  
holds 1 + 2 + 3 are palletized; hold 4 is non-palletized

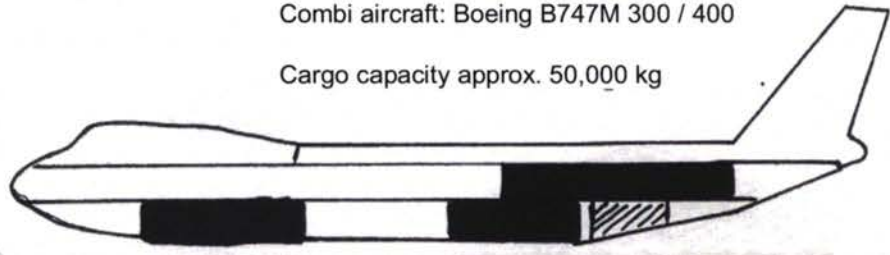
Passenger aircraft: Boeing B747 300 / 400

Cargo capacity approx. 25,000 kg



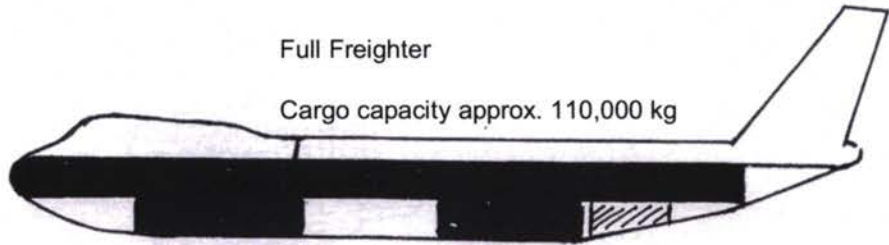
Combi aircraft: Boeing B747M 300 / 400

Cargo capacity approx. 50,000 kg



Full Freighter

Cargo capacity approx. 110,000 kg



**Loading capacity and range**

Loading capacity means the maximum amount of cargo the aircraft is destined to carry on board. It is usually defined in the unit of kg/m<sup>3</sup>.

**Non-palletised aircraft**

Below are some loading capacity and range examples of the non-palletised aircraft:

Type	Cargo capacity	Range (miles)
Fokker Friendship F2	400 kg / 2m <sup>3</sup>	1,000
Fokker Fellowship F2	400 kg / 2m <sup>3</sup>	1,000
Fokker 100	1,300 kg / 4m <sup>3</sup>	1,500
Boeing 727	3,500 kg / 7m <sup>3</sup>	2,300
Boeing 707	10,000 kg / 33m <sup>3</sup>	4,000
Boeing 737	3,400 kg / 7m <sup>3</sup>	2,500

**Palletised aircraft**

Below are some loading capacity and range examples of palletised aircraft (including wide bodies):

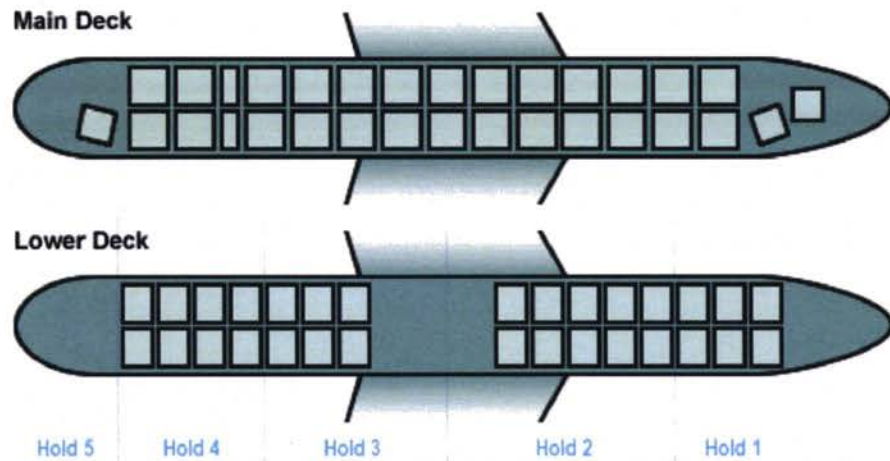
Type	Cargo capacity	Range (miles)
Airbus A310 PAX 215	10,500 kg / 50m <sup>3</sup>	4,000
DC10-30 PAX 248	17,800 kg / 60m <sup>3</sup>	5,500
B 747 - 200 PAX 387	20,300 kg / 75m <sup>3</sup>	6,800
B 747 - 300 PAX 428	19,500 kg / 75m <sup>3</sup>	7,100
B 747 - 300 6P.Main deck		
	PAX 288 35,000 kg / 192m <sup>3</sup>	7,400
B 747 - 300 6P.Main deck		
	PAX 202 55,000 kg / 300m <sup>3</sup>	7,400
B 747 - 400 with wing tips		
	PAX 421 60,000 kg / 300m <sup>3</sup>	7,400

Notes:

- Series 300 and 400 with stretched upper deck.
- All aircraft appear in various designs pertaining to passenger accommodation and cargo configuration.
- Capacity of B 747 - 300 series depends on distance. Example: AMS - BUE direct flight loading capacity is around 900 kg / 75 m<sup>3</sup>.
- Fuel consumption for AMS - NYC flight in normal weather conditions: 80,000 litres.

**Specification of loading holds**

Below is an example of the specification of loading holds in the Boeing 747-200F (Source: <http://www.cathaypacific.com>).



**Lower Deck Cargo Door Dimension**

<b>FWD CGO Door</b>	104 x 66 in
<b>AFT CGO Door</b>	104 x 66 in
<b>BULK CGO Door</b>	44 x 47 in

**Main Deck Cargo Door Dimension**

<b>Nose Door</b>	104 x 98 in
<b>Side Door</b>	134 x 120 in

**Maximum Weight & Unit - Lower Deck**

<b>Hold 1</b>	10354 kg	2P / 6A
<b>Hold 2</b>	16136 kg	3P / 10A
<b>Hold 3</b>	9801 kg	2P / 6A
<b>Hold 4</b>	13137 kg	2P / 8A
<b>Hold 5</b>	6749 kg	963 cu ft

**Maximum Units - Main Deck**

<b>Pallets</b>	31 pallets
----------------	------------

**Aircraft Maximum Payload**

<b>Weight</b>	112810 - 115493 kg
---------------	--------------------

**ULD Weight Limitation - Main Deck**

ULD	CODE	Max Load MCI ULD wt
88 x 125 inch Igloo/Container	UAB, UAK, AAP	6033 kg
88 x 125 inch Pallet	PIP, PAG, PIG	6033 kg
96 x 125 inch Pallet/Container	AQ6, P6P, PQP, PMC	6803 kg
96 x 238.5 inch Pallet/Container (20ft Pallet)	ASE, P7E	11339 kg
88 x 53 inch Pallet	PEB	B-HVX 1800 kg B-HVY 1800 kg B-HVZ 1800 kg B-HIH 1300 kg

**Questions**

1. Air cargo can be carried in the following aircraft(s)

- a. Passenger aircraft
- b. Full freighter (cargo plane)
- c. Combi plane like Boeing 747
- d. All of the above

(d)

2. The following descriptions of airplanes for cargo transport are all correct except

- a. In cargo planes that do not have a pallet system, the cargo must be secured by means of nets, belting and ropes to prevent it from moving
- b. Large and heavy cargoes are usually carried by cargo planes
- c. In passenger aircraft, the passenger's baggage and airmail has the same priority as the air cargo
- d. Palletised aircraft Boeing 747-200 has a large cargo capacity of about 270 kg/ m<sup>3</sup>

(c)

## 4.2.2 Loading Devices

### Learning objectives

The student should understand the main forms of unit load devices, the differences between them and be able to distinguish between them.

The student should also have some knowledge of the specifications of the abovementioned unit loading devices.

In order to speed up the process of air carriage, loading devices, as the easiest manageable packaging units, will be of great use. Easily manageable packaging units can significantly increase the efficiency in handling air cargo, which at the same time will help to change the face of air cargo.

In the sixties and seventies, Unit Load Devices (ULD's) were developed by cargo carriers and container manufacturers in order to facilitate the loading and unloading of cargo, especially for passenger aircraft waiting at the passenger terminal which practically lacked the elaborate on-and-off loading facilities for cargo. As far as the passenger aircraft is concerned, timing is also of great importance. ULD is efficient in use and saves time.

### Unit Load Device (ULD)

ULD's come in many forms and sizes. Often seen the ULD may consist of:

- Pallet + net
- Pallet + igloo + net
- Container.

There are specialized ULD's as well, which may provide climate control (for vegetables or meats), pressurization (for live animals), or special loading systems (for hanging garments).

ULD's can be easily weighed, physically distributed in the aircraft, and easily handled by ground transportation equipment. Therefore ULD's can be easily integrated in an automated cargo handling and tracking system. Often ULD's can also be used for further carriage by road or water without elaborate re-packing. The disadvantages of ULD's are that they increase weight and fuel burn, and need special handling for packing as well as the harmonization of control and use between carriers.

With the increase in size of aircraft and the availability of all-cargo and combi aircraft, the usage of ULD's has been further expanded.



### **Pallet**

Pallets are flat sheets of aluminium on which shipment pieces are stacked. It is a platform on which the cargo is built up. Each pallet is usually covered with a net to secure loose pieces.

In order to ensure that the built-up pallet fits into the intended aircraft, frames have been designed within which the pallet must be built up. In addition, a maximum permissible mass is set.

With regard to flight safety, the cargo must of course not be allowed to shift, so it is firmly tied down on the pallet with a net and straps. To this end, rings are provided around the edges. With this system, loading and unloading can be done in the shortest possible time.

### **Igloo**

An igloo is a cap (with net) made from a light but strong material of which the shape matches the profile of the aircraft cabins. The front side is open. The igloo is mounted on a pallet, and the net ensures that the contents cannot move around.

### **Pallet + igloo + net**

Pallet + igloo + net form an inseparable loading unit. Igloos are made in a range of sizes (large, small, rectangular, half etc.) depending on the type of aircraft in which they are used.

### **Container**

A container is the standardized load unit for transport. The standard size is 20ft, the unit of which is often called TEU. Containers are used for the carriage of most general cargo, baggage and mail.

In the Boeing 747 / 747M, DC-10 and A310, containers are often used in addition to pallets and igloos for transporting baggage and / or freight. Containers are loaded into the belly of the aircraft.

Detailed descriptions of a set of unit load devices are available on the following page.

**3.10. UNITIZED CONSIGNMENTS**

(For carrier deviating/additional rules see section 8.3.)

**3.10.8. GLOSSARY OF TERMS**

Class Rating	Description	IATA ID Code	Tare Weight Allowance		R/C <sup>1)</sup>	Notional Volume <sup>2)</sup>		U.S. Domestic (ATA) Terminology
			kg.	lb.		cu. ft	m <sup>3</sup>	
1/1S	2,438 x 6,058 x 2,438 mm (96 x 238.5 x 96 in) Main Deck Container	AGA	1,000	2205	R	1,174	33.25	M2
	2,438 x 6,058 x 2,438 mm (96 x 238.5 x 96 in) Main Deck Pallet with Net	PG	400	882	R	1,174	33.25	M2 Notted Pallet
1P	2,438 x 4,978 x 2,438 mm (96 x 196 x 96 in) Main Deck Pallet with Net	PR	330	728		1,045	29.60	--
2/2Q	2,438 x 3,175 x 2,438 mm (96 x 125 x 96 in) Main Deck Pallet with Non-Structural Igloo	UM	260	572	R	606	17.16	--
	2,438 x 3,175 x 2,438 mm (96 x 125 x 96 in) Main Deck Container	AMJ	260	573	C	565	16.50	M1
	2,438 x 3,175 x 2,438 mm (96 x 125 x 96 in) Main Deck Pallet with Net	PM	130	287	R	606	17.16	--
	2,438 x 3,175 x 2,438 mm (96 x 125 x 96 in) Main Deck Container	AMA	260	572	R	606	17.16	M1
2A	2,235 x 3,175 x 2,438 mm (88 x 125 x 96 in) Main Deck Pallet with Net	PA	120	264	R	553	15.66	Type A
2AA	2,235 x 3,175 x 2,235 mm (88 x 125 x 88 in) Main Deck Non-Structural Igloo with Net	UA	250	551	R	506	14.33	Type A
2B	2,438 x 3,175 x 1,829 mm (96 x 125 x 72 in) Main Deck Pallet with Net	PM	130	287	C	451	12.77	--
	2,438 x 3,175 x 1,829 mm (96 x 125 x 72 in) Main Deck Non-Structural Igloo with Net	UM	250	551	C	451	12.77	--
2BG	2,438 x 3,175 x 1,626 mm (96 x 125 x 64 in) Lower Deck Pallet with Net	PM	130	287	R	399	11.39	--
	2,438 x 3,175 x 1,626 mm (96 x 125 x 64 in) Lower Deck Container	AMU	200	440	C	480	13.70	LD39
	2,438 x 3,175 x 1,626 mm (96 x 125 x 64 in) Lower Deck Container	AMP	200	440	R	399	11.39	--
2BS	2,438 x 3,175 x 2,438 mm (96 x 125 x 96 in) Main Deck Horse Stall	HMA	--	--	R	565	16.00	--
2C	2,235 x 3,175 x 2,997 mm (88 x 125 x 118 in) Main Deck Pallet with Net	PA	120	264	R	682	19.31	--
2D	2,235 x 3,175 x 2,184 mm (88 x 125 x 86 in) Main Deck Pallet with Net	PA	120	264	R	494	13.99	M4 Notted Pallet
2H	2,438 x 3,175 x 2,997 mm (96 x 125 x 118 in) Main Deck Pallet with Net	PM	130	287	C	747	21.16	M5 Notted Pallet
2R	2,438 x 2,991 x 2,438 mm (96 x 117.75 x 96 in) Main Deck Pallet with Net	PF	--	--	R	569	16.11	--
	2,438 x 2,991 x 2,438 mm (96 x 117.75 x 96 in) Main Deck Container	AF	260	572	R	569	16.11	--
2W	2,438 x 3,175 x 1,626 mm (96 x 125 x 64 in) Pallet with Net (with extension wings for use within Contour F)	PM	130	287	C	480	13.70	--
2WA	2,438 x 3,175 x 1,626 mm (96 x 125 x 64 in) Pallet with Net (with extension wings for use within Contour U)	PM	130	287	C	557	15.80	--
3	2,235 x 3,175 x 2,184 mm (88 x 125 x 86 in) Pallet with Net	PA	120	264	C	420	11.89	Type A
	2,235 x 3,175 x 2,184 mm (88 x 125 x 86 in) Pallet with Non-Structural Igloo Assembly	UA	230	507	C	420	11.89	Type A
	2,235 x 3,175 x 2,184 mm (88 x 125 x 86 in) Main Deck Container	AA	230	507	C	420	11.89	Type A
3A	2,235 x 3,175 x 2,064 mm (88 x 125 x 81.25 in) Main Deck Pallet with Net for Wide Body Aircraft	PA	120	264	R	475	13.45	--
4	2,235 x 2,743 x 2,184 mm (88 x 108 x 86 in) Main Deck Pallet with Net	PB	100	220	C	391	11.07	Type A
	2,235 x 2,743 x 2,184 mm (88 x 108 x 86 in) Main Deck Non-Structural Igloo Assembly	UB	190	419	C	391	11.07	Type A

3.10. UNITIZED CONSIGNMENTS

(For carrier deviating/additional rules see section 8.3.)

Class Rating	Description	IATA ID Code	Tare Weight Allowance		R/C <sup>1)</sup>	Notional Volume <sup>2)</sup>		U.S. Domestic (ATA) Terminology
			kg.	lb.		cu. ft.	m <sup>3</sup>	
4A	2,235 x 2,743 x 2,032 mm (88 x 108 x 80 in) Main Deck Non-Structural Igloo Assembly	UB	190	419	C	360	10.20	Type A
5	2,235 x 3,175 x 1,626 mm (88 x 125 x 64 in) Pallet with Net	PA	120	264	C or R	350	9.91	Type A
	2,235 x 3,175 x 1,626 mm (88 x 125 x 64 in) Pallet with Non-Structural Igloo Assembly	UA	200	440	C or R	350	9.91	LD7
	2,235 x 3,175 x 1,626 mm (88 x 125 x 64 in) Container	AA	200	440	C or R	350	9.91	R = LD9, C = LD29
5A	2,235 x 3,175 x 1,626 mm (88 x 125 x 64 in) Pallet with Net for B767 Aircraft Only (overhangs outside base dimensions not permitted)	PA	120	264	C or R	350	9.91	--
5W	2,235 x 3,175 x 1,626 mm (88 x 125 x 64 in) Pallet with Net (with extension wings for use within Contour U)	PA	120	264	C	460	13.03	--
5WA	2,235 x 3,175 x 1,626 mm (88 x 125 x 64 in) Pallet with Net (with extension wings for use within Contour F)	PA	120	264	C or R	422	11.95	--
6	1,534 x 3,175 x 1,626 mm (60.4 x 125 x 64 in) Pallet with Net	PL	90	198	C or R	245	6.94	--
	1,534 x 3,175 x 1,626 mm (60.4 x 125 x 64 in) Container	AL	180	397	C or R	245	6.94	R=LD5, LD10, LD11, C=LD6
6A	2,438 x 1,534 x 1,626 mm (96 x 60.4 x 64 in) Lower Deck Container	AQ	120	264	C	245	6.94	LD8
6B	2,438 x 1,534 x 1,626 mm (96 x 60.4 x 64 in) Non Certified Container	DQ	150	330	C	254	7.20	LD8
6Q	2,438 x 1,534 x 1,626 mm (96 x 60.4 x 64 in) Lower Deck Livestock Pallet	PQ	120	264	C	245	6.94	LD8
6W	1,534 x 3,175 x 1,626 mm (60.4 x 125 x 64 in) Pallet with Net (with extension wings for use within Contour F)	PL	90	198	C	320	9.06	--
7/7 <sup>3)</sup>	2,235 x 1,562 x 2,184 mm (88 x 61.5 x 86 in) Pallet with Net	PY	--	--	C	215	6.09	--
	2,235 x 1,562 x 2,184 mm (88 x 61.5 x 86 in) Half Pallet with Non-Structural Igloo Assembly	UY	135	298	C	215	6.09	--
7A	2,438 x 1,534 x 1,626 mm (96 x 60.4 x 64 in) Lower Deck Container	AQ	110	243	R	202	5.70	LD4
8 <sup>4)</sup>	1,534 x 1,562 x 1,626 mm (60.4 x 61.5 x 64 in) Certified Container	AK	70	154	C	160	4.53	LD1, LD3
	1,534 x 1,562 x 1,626 mm (60.4 x 61.5 x 64 in) Non Certified Container	DK	40	88	C	160	4.53	LD1, LD3
8A	1,534 x 1,562 x 1,143 mm (60.4 x 61.5 x 45 in) Lower Deck Container (for use on A319, A320 and A321 aircraft only)	AK	90	200	C	130	3.70	LD3-45
	1,534 x 1,562 x 1,143 mm (60.4 x 61.5 x 45 in) Pallet with Net (with extension wings for use within Contour H - A319, A320 and A321 aircraft only)	PK	74	163	C or R	130	3.70	--
8C	1,534 x 1,562 x 1,626 mm (60.4 x 61.5 x 64 in) Rectangular Non Certified Container	DK	40	88	R	127	3.60	--
8D	1,194 x 1,534 x 1,626 mm (47 x 60.4 x 64 in) Lower Deck Container	AP	60	132	C	120	3.40	LD2
	1,194 x 1,534 x 1,626 mm (47 x 60.4 x 64 in) Non Certified Container	DP	80	176	C	120	3.40	LD2
8F	2,235 x 1,346 x 1,600 mm (88 x 53 x 63 in) Container	AE	--	--	R	163	4.60	--
9	2,235 x 1,346 x 1,930 mm (88 x 53 x 76 in) Pallet with Net	PE	60	132	C	188	5.32	--

Notes  
 1) R = Rectangular; C = Contoured  
 2) The notional volume is the maximum practically usable volume. The actual usable volume may vary somewhat depending on unit design.  
 3) This rate classification may include a half pallet size member owned Non-Aircraft Container.  
 4) Maximum top dimension of this ULD not exceeding 234 cm. (92 in.)



Below some pictures of the transport equipment for unit load devices are shown.

carts

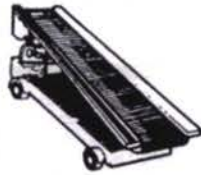


Ramp Equipment.

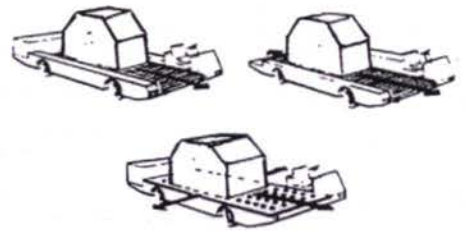
tractors



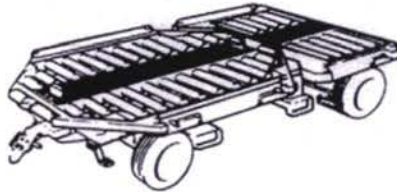
conveyor belt.



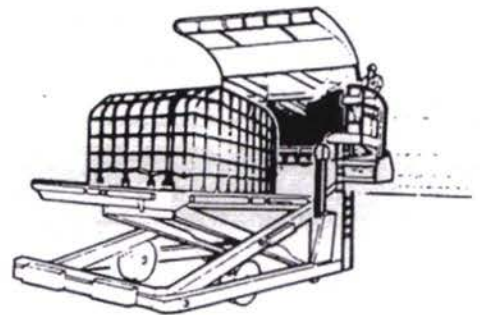
transporter



container dolly



highloader



## Types of ULD's

### IATA ULD

An IATA ULD is a loading unit approved and registered by IATA on or in which cargo can be transported.

The IATA ULD is further divided into two types:

- Carrier's ULD - property of the airline;
- Shipper's ULD - property of the shipper.

### Aircraft ULD

If a ULD forms an actual part of the aircraft equipment, it is called an aircraft ULD, which can be:

- Aircraft pallet + net;
- Aircraft pallet + igloo + net;
- Aircraft container.

### Non-aircraft ULD

This is a ULD which does not meet the requirements of an aircraft ULD, e.g. basket, crate.

## ULD Terminology and Indications

- ULD - Unit Load Device
- Pallet - P
- Igloo - U stowed in lower and main deck
- Container. - A always stowed in lower deck

ATA (Air Transport Association of America) indication examples:

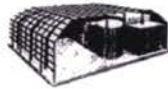
- LP = lower deck pallet / igloo
- MP = main deck pallet
- LD3 = container

**Questions**

1. Which IATA ULD descriptions fit which picture? Please indicate.



pallet with net  
code P



igloo with net  
code U



lower deck container  
code LD3



main deck container B747  
code MD3

2. Among the following statements of unit load devices, all are correct except

- a. ULD was developed in the sixties and seventies in order to facilitate the loading and unloading of cargo to save time of waiting at the terminal
- b. There are very few standard forms and sizes of ULD. The choices of ULD are therefore limited
- c. If the ULD forms an actual part of the airplane, it is called an aircraft ULD
- d. If the ULD approved and registered by IATA is the property of the shipper, it can be called shipper's ULD

(b)

### 4.3 Air Waybills and Accompanying Documents

**Learning objectives**

The student should have knowledge of the functions, outline and application of the air waybill as well as the accompanying documents in air transport.

#### 4.3.1 The Air Waybill

**Learning objectives**

The student should understand the main functions an air waybill assumes, and the distribution of the air waybill originals and copies.

The student should be able to read the air waybill number.

Passengers travelling by air are issued with tickets as proof of the contract of carriage. In air cargo transport, this similar document is called an air waybill, abbreviated AWB.

As in other modes of transport, the air waybill is derived from the “Bill of Lading” used in maritime transport, and so are the functions that a bill of lading assumes. But the functions of a maritime bill of lading are not fully adapted to other transport modes due to the latter’s specifications. For example, the function of a maritime bill of lading as the document of title, which enables the transfer of title of the goods in transit, is of little or no importance in air transport, considering the very short time in practice when the goods actually remain under the control of the carrier.

Meanwhile other functions may be assumed to the bill of lading in a different mode of transport. For example in air transport, the air waybill is also often considered the insurance proof if the shipment is insured against transport risk.

In business, around 90% of all the air waybills are prepared by air cargo agents on behalf of the shipper and the carrier. The air waybill is also always completed on the basis of a Letter of Instruction, which the sender must complete.



### **Letter of Instruction (SLI)**

Shipper's written instruction is called Shipper's Letter of Instruction (SLI).

The Shipper's Letter of Instruction is completed in full and signed by the shipper. The shipper remains accountable for all information, especially of the goods type.

The waybill is made up in accordance with this instruction. But before a waybill is issued, it's worthwhile to check whether the shipment can actually be accepted as air cargo.

### **Originals and copies of air waybill**

As prescribed by IATA, the air waybill consists of 3 original copies, with a minimum of 6 and a maximum of 11 additional copies. Each copy assumes a distinctive function.

#### **Air waybill originals**

- Original no. 1 - green  
This is intended for the administration of the carrier (transporter). The airway bill serves as the accounting document for the issuing carrier and a documentary evidence of carrier's and shipper's signature to the contract of carriage.
- Original no. 2 – pink  
This accompanies the shipment and is intended for the consignee.
- Original no. 3 - blue  
This is intended for the shipper (sender). It serves as proof of receipt of the goods for shipment and documentary evidence of the contract of carriage between the carrier and the shipper.

The original copies, all having the same validity, must clearly show the signature of the shipper or his representative, and the signature of the carrier or his IATA cargo agent.

#### **Air waybill copies**

The additional copies of air waybill, with a minimum of 6 and a maximum of 11, are distributed (used) as follows:

- Copy no. 4 - yellow  
This copy, marked "delivery receipt", accompanies the shipment to its final destination, to be signed by the consignee upon delivery, after which it is kept on file in the office of the delivering carrier to serve as:

- a. proof of delivery of the shipment in good order and condition to consignee;
  - b. evidence of completion of the contract of carriage.
- Copy no. 5 - white  
This copy, marked for "airport of destination", also accompanies the shipment to its final destination, for use in effecting clearance of the shipment through customs.
  - Copy no. 6 - white  
This copy, marked "for third carrier", is to be retained by the third carrier, if any, to serve as their traffic document.
  - Copy no. 7 - white  
This copy, marked "for second carrier", is retained by the second carrier, if any, to serve as their traffic document.
  - Copy no. 8 - white  
This copy, marked "for first carrier", is retained by the first carrier to serve as their traffic document.
  - Copy no. 9 - white  
This copy, marked "for agent", is retained by the issuing IATA cargo agent who issues the air waybill on the airline's behalf.
  - Copies no. 10 – and more (up to no.14)  
These are extra copies for use by any of the carriers, if needed.

### **Functions of the air waybill**

Though the air waybill is originally derived from the maritime bill of lading, it assumes some different functions due to the specific situations of air cargo transport. The air waybill bears little function as a document of title. Instead, the evidentiary function is much more important. An air waybill is primarily proof of the air cargo contract. It is in fact the contract of carriage between the carrier and the shipper.

Air waybill is a non-negotiable document. Negotiable means that the air waybill can be handed over or transferred in a certain manner e.g. proper endorsement to another person. Endorsement can be made either in blank or to a person, and as a consequence of which that person acquires certain rights in relation to the goods (i.e. entitled to take possession of the goods). Air waybill therefore, is a straight bill of lading. The words “non-negotiable” on the air waybill must not be crossed out or tampered with in any way.

The air waybill in general is considered to have the following functions:

a) Proof of receipt of goods for shipment

When the shipper delivers his goods for carriage, he expects to receive a receipt as proof that he has tendered the goods in a good order and condition.

Therefore, a copy of the air waybill duly signed by the Airline (or IATA Cargo Agent) is given to the shipper as evidence of acceptance of his goods. Upon issue of a copy to the shipper (blue), the airline acknowledges that it has accepted the carriage the shipment described in the waybill (in outwardly good condition, unless stated otherwise on the waybill).

b) Evidence of contract of carriage

The air waybill, once executed, serves as documentary evidence of the conclusion of a contract of carriage, of which the airline company and the consignee (green and pink) receive one original copy each. Before such a contract of carriage becomes valid it must be signed by the shipper or his/her representative and the airline or an IATA Cargo Agent acting on its behalf. Where the same person is acting on behalf of both, the shipper and the airline, he/she must sign the air waybill twice.

The conditions of the carriage agreement are printed on the reverse side of the three original copies. The waybill therefore contains all transport instructions (including route, means of payment etc.), and the persons involved with the transport can identify the shipment by use of the air waybill. By referring to this waybill, the consignee can also check whether the contract of carriage has been fully complied with.

c) Proof of insurance

If the shipment is "insured on waybill" against transport risk, then the air waybill also serves as a proof of insurance. The air waybill must be completed appropriately.

d) Basis for air cargo rate calculation

As the air waybill shows all charges connected with the transportation by air, the air waybill serves as a basis for the calculation of cargo rates and the settlement thereof between the carrier and the shipper or consignee as well as between the companies involved in the transport.

Apart from the above observed functions, the air waybill is also often used in customs declarations, both for outward and inward cargoes, though other documents may also be required by customs for the clearance of the goods. The air waybill is normally the basic document to be presented for customs

clearance. Finally, since the air waybill contains all necessary information as to the handling, despatch and delivery of the goods, it serves as a guide for the airline(s) as well.

As the conditions of the contract of carriage, as printed on the reverse of the original waybill, are the same for all IATA member companies, these companies accept one another's waybills and in most cases a single waybill will suffice even if two or more companies are involved in the transport. Even with many companies which are not IATA members whose conditions of carriage broadly correspond to the conditions of the IATA companies, agreements often exist ("Interline agreements") in terms of which these waybills are mutually acceptable.

### **Air waybill number**

The air waybill number is used to differentiate between the bill as well as the consignment associated with the bill. The number is shown at the top left and right corners of the air waybill.

Each air waybill number is composed of 11 numbers in total, which are made up of:

- The first 3 digits are the prefix number of the company that issues the waybill.  
For example for KLM this is 074, for SAS 117 etc.
- The serial number of 8 digits, the identification of the air waybill.

A detailed explanation of the air waybill is available by referring to Annex 4, including an example of an air waybill and instructions for completion.

**Questions**

1. For whom is each copy of the original airway bill intended? Please indicate.

Original 3 (blue)	Shipper
Original 1 (green)	Carrier
Original 2 (pink):	Consignee

2. The air waybill assumes many functions. Judge whether the following functions are true or false.

- a. Proof of Receipt of Goods for Shipment (T)
- b. Shippers Declaration of Dangerous Goods (F)
- c. Basis for air cargo rate calculation (T)
- d. Proof of Insurance (T)
- e. Customs Declaration (T)

3. Which of the following statements are applicable to the air waybill?

- a. The air waybill is a negotiable document
  - b. The air waybill is documentary evidence of the contract of transportation
  - c. The air waybill represents the goods
  - d. The air waybill can be endorsed to another party
- (b)

4. The air waybill number is a unique number to identify the consignment. The air waybill number is composed of an 11 digit number in total. The first 3 digit numbers represent

- a. The airline company that issues the waybill
  - b. The serial number to identify the air waybill
  - c. The air code of the cargo in that consignment
  - d. The code of the package that is used for the consignment
- (a)

### 4.3.2 Types of Air Waybills

**Learning objectives**

The student should know the differences among the three types of air waybills: neutral air waybill, master air waybill and the house air waybill, and understand in what circumstances each of such documents is used.

**The Neutral Air Waybill (NAWB) as recommended by FIATA**

Neutral Air Waybills (NAWB) are exclusively printed and obtained through IATA verification and clearance. Once the cargo agent or shipper obtains the assigned air waybill number provided by the airline or the IATA air cargo agent that is entitled to issue House Air Waybill, the NAWB's are approved for computer printers and have the same validity as a Master Air Waybill or House Air Waybill.

**House Air Waybill (HAWB)**

If a forwarder takes on the function of a carrier and based on which, an air waybill is issued in its own name, this air waybill is called Forwarder Bill of Lading or House Air Waybill.

There are many variations of house air waybills present in the market. But note that a forwarder is normally more of an intermediary than a carrier.

**Master Air Waybill (MAWB)**

A Master Air Waybill (MAWB) is the regular airline bill of lading issued by the originating airline when more than one airline is involved with a shipment, or when a freight forwarder issues a House Air Waybill.

MAWB is used for individual consignments. As for the airlines, there is no difference in MAWB whether the consignment is a single shipment directly from the shipper or forwarder, or a consolidated shipment from consolidators.

### Questions

1. *The following are all different types of air waybills except*

- a. Neutral air waybill
- b. Clean air waybill
- c. House air waybill
- d. Master air waybill

(b)

2. *True or False?*

- House air waybill is issued by a forwarder in his own name, which is often called forwarder bill of lading (T)
- Master air waybill is issued by a consolidator (F)
- When a freight forwarder issues a house air waybill to the sender, the air waybill issued by the real airline to the forwarder is named neutral air waybill (F)
- Neutral air waybill is exclusively printed and obtained through IATA verification and clearance(T)

### 4.3.3 Accompanying Documents

#### Learning objectives

The student should be aware of the other main documents that are involved in air transport, and be able to explain why and when such documents are used in practice.

The most important document governing the relationship between the parties in air cargo transport is the air waybill. Other documents such as the Shipper's Letter of Instructions also play an important role. On top of these, there are documents which may be required by various authorities, such as Consular invoices, Customs declarations, Certificate of origin etc.

#### Consular invoices

A consular invoice is a document with a detailed statement of goods, certified by a consular official of the importing country, and used by the customs officials to verify the value, quantity and nature of the shipment shipped.

The consular invoice describes the goods shipped, showing information such as the consignor, consignee and value of the shipment. It has spaces for showing marks, numbers, weights, goods value, origin, and a declaration of

the accuracy of the contents of the invoice. Often it is in the language of the importing country. It may be required to be on a special form and be subject to the payment of special fees.

Consular invoices are required by certain nations and used to identify goods. Forms can be purchased from the Consul of the importing country, at the point of shipment. Usually other documents, such as the commercial invoice, will also have to be presented to the Consul at the time the consular invoice is legalized.

### **Customs invoices**

A customs invoice is a document required by customs in an importing country in which the seller states the price (e.g. selling price, price of identical goods), and specifies costs for freight, insurance and packing etc. in terms of delivery and payment. This is for the purpose of determining the customs value in the importing country of goods consigned to that country.

The customs invoice varies in format but they contain essentially the same data as in commercial invoices and packing list.

The customs invoice is usually available at a local customs broker or some forwarding companies. If the goods do not fall into a special category such as hazardous goods, the invoice can be prepared by an exporter himself/herself or his/her agent. It is therefore a self-certified document.

Some importing countries may also even require the importer to provide completed customs invoices for customs clearance.

### **Certificate of Origin**

A Certificate of Origin (CO) is a document certifying the country in which the goods are manufactured, i.e. the origin of the shipment. It is used by customs offices to determine the appropriate duties to be assessed on the goods imported and, at times, to determine whether the shipment may be legally imported at all.

The CO may be required because of established treaty arrangements between the countries, varying duty rates, and preferential duty treatment dependent on the shipment's origin. Some nations restrict imports from certain countries; many countries limit the quantity of goods that are allowed to be imported.

In certain cases, the CO may also include information of the specific regional content value, such as the local materials and labour content. The CO may be required even though the commercial invoice contains the information. The descriptions and amounts on the CO must be consistent with those entered on the Invoice.



The certificate of origin is prepared and signed by the exporter, or its agent, and attested to by a local authority or competent organization such as the Chamber of Commerce.

**Question**

1. Which description and which document belong to each other? Please indicate.

A document certifying the country in which the goods are manufactured	Certificate of Origin
A document with a detailed statement of goods, certified by a consular official of the importing country	Consular invoice
For customs purposes, the document varies in format but contains essentially the same data as in commercial invoices and packing lists	Customs invoice

**4.4 Calculation of Air Freight**

**Learning objectives**

The student should have knowledge of tariff structure in general, and the TACT Tariffs in air cargo transport.

The student should learn how to calculate the air freight, determining the chargeable weight and the applicable rate and charges in real business.

The air freight of a shipment is calculated by multiplying the "chargeable weight" by the "applicable rate":

Air Freight = chargeable weight x applicable rate.

Pricing is an important element of the air cargo industry. Only those goods are carried that can pay their way in this high-cost sector of the transport industry.

The term for prices in air transport is tariffs. Tariffs are the prices for the air carriage plus the conditions that apply to these prices. For cargo transport the technical term for price is "rate" (in passenger carriage it is the "fare").

Tariff rates for airfreight are in many areas seen as reference indicators only and therefore they are negotiable.

#### 4.4.1 Airfreight Publications and International Rates

**Learning objectives**

The student should have knowledge about how to read publications for airfreight, and be aware of the co-existence of international rates and domestic rates in airfreight.

Airlines publish the freight rates and charges applicable to the movement by air. Though different airlines may have airfreight publications in different formats or presentations, all publications contain the same basic information. All rates and charges are published in alphabetical order from airport to airport, excluding extra charges such as pickup, export and import clearance, delivery and storage charges. The rate applies in the direction to be flown, i.e. from place of dispatch ("origin") to place of destination ("destination"), quoted in either per pound/lb, or per kilogram/kg.

Rates are often quoted in the national currency of the airlines. For calculating the freight on the air waybill therefore, the local currency is used unless specified otherwise.

#### **International rates**

As opposed to the domestic rate, international rates apply to the air shipment crossing countries.

As in domestic air transport, the factors influencing the rates for international air shipment include the competition in the air industry, competition from other modes of transport, the market demand, the nature of the goods, traffic regularity, the quantity and value of the goods and so on.

#### **Question**

1. Judge whether the following statement are true or false

- Rates and charges in airfreight publications are always in local currency (T)
- Rates and charges in airfreight publications include not only the tariff for the transport from airport to airport, but also the charges such as pickup, export and import clearance fees. (F)
- The air rates can either be quoted in per pound/lb, or per kilogram/kg (T)
- Airfreight publications come in only one format (F)

#### 4.4.2 TACT Tariffs and Rules of Calculation

**Learning objectives**

The student should understand what TACT tariffs is, its main structure, and how to read the TACT Rates.

The student should know the rules of calculation of TACT tariff, and learn how to calculate the chargeable weight in given conditions.

As airlines are free to set their own air freight, and that the same lane segments are often served by a number of carriers, or that one carriage may involve more than one air carrier, coordination between air carriers in respect of cargo rates is necessary. Due to Aeropolitical restrictions often carriers agree on rates in particular bilateral markets as well. “The Air Cargo Tariff” (TACT), is the result of the effort from IATA and its member airlines, a joint tariff of IATA members, providing for a reasonable uniformity of rates and their conditions.

**TACT tariffs**

TACT is an internationally recognized authoritative publication. It offers airlines, cargo agents and shippers a uniform reference source for air cargo rates, rules and regulations as well as the most comprehensive coverage of general rules. Tariffs at TACT are discussed and coordinated in yearly traffic conferences of IATA divided into three regional segments, which are jointly held.

**IATA Manual (TACT) in three volumes**

The IATA manual TACT is issued in three volumes: TACT Rules, TACT Rates North America and TACT Rates Worldwide. The TACT Rates North American and TACT Rates Worldwide are in the red and green sections of the manual.

TACT Rules contain all general rules, regulations and procedures, deviating and/or additional rules, as well as regulations and procedures. TACT Rules are issued twice a year, in April and October.

TACT Rates North America contains the rates to, from and within the North and South America and the islands adjacent thereto such as Hawaii, Greenland, Bermuda, the West Indies and the islands of the Caribbean Sea.

TACT Rates Worldwide contains all others rates than those included in TACT Rates North America.

For more detailed information about the TACT Manuals, please refer to Annex 5.

**Rates validity**

The applicable rates are those valid on the day when the shipment is accepted for carriage by the airline i.e. the date on the air waybill.

Unless specified otherwise, the rates apply between the two points specifically designated regardless of the route by which the transportation takes place. For example, the rate for a shipment from Amsterdam to Nairobi is the same, whether transportation is done directly or via London.

The rates, which may not be deviated from, are the same for all IATA companies and apply to transportation on the routes of the publishing companies as well as on the routes of all other IATA companies. A large number of companies which are not IATA members have also agreed to these rates by means of a rate agreement.

Rate is based on the shipment. An air cargo shipment may consist of one or more packages transported on a single air waybill, tendered by one shipper and intended for one receiver.

**TACT Tariff rules of calculation**

The air freight of a shipment is calculated by multiplying the "chargeable weight" by the "applicable rate":

$$\text{Air Freight} = \text{chargeable weight} \times \text{applicable rate}$$

**Chargeable weight**

The chargeable weight of a shipment is determined by the actual gross weight or the volume weight, whichever is higher.

The actual gross weight is the weight of the shipment including its packing. The actual gross weight is often used as the chargeable weight in case of cargo which is heavy in relation to its volume, such as gold, metal parts, machinery, etc. (high density cargo). The actual gross weight is expressed in kg, with fractions of a kilogram rounded up to the next higher half kilogram ½ kg or in case of lb, rounded up to the next higher full pound 1/1 lb. For example:

Gross weight		Chargeable weight
4.15 kg	=>	4.5 kg
8.80 kg	=>	9.0 kg
10.40 lbs	=>	11 lbs
25.81 lbs	=>	26 lbs

The volume weight is used as the chargeable weight in case of cargo which is light in relation to its volume, such as woollen pullovers, hats, etc. (low density cargo).

To get the right dimensions per package, measurement is always the greatest length, the greatest width and the greatest height regardless of the shape of the package. Fractions of dimensions must also be round up or down to the next higher/lower half centimetre or inch.

The calculation formula for volume weight is, in terms of kg:

If the volume is measured in centimetres (cm):  $L \times W \times H / 6000$

If the volume is measured in inches:  $L \times W \times H / 366$

If the volume is measured in inches and the weight in terms of lb:  $L \times W \times H / 166.$

Since the chargeable weight is the higher one between gross weight and volume weight, both then should be calculated and compared in any of the air cargo shipment. Usually for high density cargo the gross weight will be taken as the chargeable weight, while for low density cargo it's the volume weight.

### **Shipment**

As a particular air cargo rate is based on a shipment, it is important to understand the difference between the shipment and package. One shipment may consist of one or more packages. One single air waybill pertains to one shipment. Shipment can also be called a consignment.

If a shipment consists of several packages, the chargeable weight must be calculated from the total gross weight and the total volume of the shipment. Therefore, do not calculate the chargeable weight per package. (The packages are all shipped on one waybill, by one shipper, to one receiver and at the same rate.)

If a consignment consists of several pieces containing both high and low density cargo, and If the entire consignment is to be charged at the same rate, the chargeable weight will be the total actual gross weight or the total volume weight of the consignment, whichever is higher.

**Chargeable weight examples**

Example 1:

1 package, the gross weight of which is 4.70kg and the dimensions are 60 x 20 x 20 (cm<sup>3</sup>).

The actual gross weight = 4.70kg => 5 kg

The volume weight =  $\frac{60 \times 20 \times 20}{6,000} = 4.00 \text{ kg,}$

The chargeable weight is the actual gross weight, 5kg.

Example 2:

1 package, the gross weight of which is 4.70kg and the dimensions are 60 x 50 x 20 (cm<sup>3</sup>).

The actual gross weight = 4.70kg => 5 kg

The volume weight =  $\frac{60 \times 50 \times 20}{6,000} = 10.00 \text{ kg,}$

The chargeable weight is the volume weight, 10kg.

Example 3:

If the dimensions of one shipment are 150.2 x 125.5 x 100.6 (cm<sup>3</sup>), what is the volume weight in kilogram?

Volume weight =  $\frac{150 \times 126 \times 101 \text{ (cm}^3\text{)}}{6,000} = 318.1 \text{ kg} \Rightarrow 318.5 \text{ kg}$

Example 4:

If the dimensions of one shipment are 75 1/8 x 65 1/2 x 55 3/4 (cu. inches), what is the volume weight in lb?

Volume weight =  $\frac{75 \times 66 \times 56 \text{ (cu. inches)}}{166} = 1,669.8 \text{ lbs} \Rightarrow 1,670 \text{ lbs.}$

Example 5:

There is a shipment consisting of two packages. The shipment is to be shipped from X to Y on one waybill at one rate. Package A: gross weight 30.4 kg; dimensions 90 x 50 x 60 cm. Package B: gross weight 30.0 kg; dimensions 60 x 50 x 40 cm. What is the chargeable weight?

Total gross weight: A + B = 30.4 + 30.0 = 60.4 kg => 60.5 kg.

Total volume weight: A+B = 90 x 50 x 60 cm + 60 x 50 x 40 cm = 270,000 cm<sup>3</sup> + 120,000 cm<sup>3</sup> = 390,000 cm<sup>3</sup> =  $\frac{390,000}{6,000} = 65 \text{ kg}$

The chargeable weight is the total volume weight, 65 kg.

**Questions**

*1. True or False?*

- a. TACT tariffs manual is composed of three volumes: TACT Rules, TACT Rates North America and TACT Rates Worldwide (T)
- b. TACT is an internationally recognized publication with authority. However, the tariffs are solely determined by the IATA and no coordination is made with its member airlines (F)
- c. The valid TACT rate for a certain consignment is the one valid on the date when the air cargo arrives at its destination (F)
- d. The published air rate between two airports is only valid for the direct flight between the two airports. Once the actual air traffic route changes, e.g. involving one stop-over at a third airport between, the applicable air rate will be adjusted (F)

*2. What is chargeable weight?*

- a. The actual gross weight of the shipment, including the packing
- b. The volume weight of the shipment, measured in its greatest length, width and height
- c. The actual gross weight or the volume weight of the shipment, whichever is higher
- d. The actual gross weight or the volume weight of the largest package within the shipment, whichever is higher

(c)

*3. In determining the chargeable weight, there is a / are breakpoint(s) whether to take the actual gross weight or volume weight. What is / are the breakpoint(s)?*

- a. a. 3,000 cm<sup>3</sup> for each kg
- b. b. 6,000 cm<sup>3</sup> for each kg
- c. c. 9,000 cm<sup>3</sup> for each kg
- d. d. 366 cu inches for each kg

(b & d)

*4. Usually for high density cargo the gross weight will be taken as the chargeable weight, while for low density cargo it is the volume weight. Which chargeable weight fits which cargo category below? Please indicate.*

Hardwood	Actual gross weight
Drinks	Actual gross weight
Paper diapers	Volume weight
Cushions	Volume weight

5. The fraction of a kilogram or dimension is always rounded up or down to the next unit for calculation of the actual gross weight or volume weight. Which of the following is incorrect?

- a. 8.80 kg => 9.0 kg
- b. 10.05 lbs => 11 lbs
- c. 150.2 cm => 150.5 cm
- d. 100.6 cm => 101 cm

(c)

#### 4.4.3 Applicable Rates and Charges

##### **Learning objectives**

The students should understand the different types of air cargo rates, the differences among them, and the precedence of the rates in application.

The students should learn in practice how to decide the appropriate rate applicable to a certain consignment and to calculate the air freight with given chargeable weight.

In determining the air freight, after calculation of the chargeable weight, the type of rate that applies to the specific shipment is chosen, i.e. applicable rate and charges.

Air Freight = chargeable weight x applicable rate.

There are many types of rates and charges in the business practice. The often quoted rates and charges are: minimum charges (M), general cargo rates (GCR), class rates or commodity classification rates (CCR), and specific commodity rates (SCR).

As a rule, air cargo rates are quoted per kg and/or per lb. The rate applies from airport to airport, excluding costs to and from airports, as well as the outward and inward clearance costs. Loading and unloading are generally not calculated into the air freight rate either.

##### **Precedence of rates and charges**

Among the different types of cargo rates, there are general rules of precedence which apply to the order to determine which final rate will be used to calculate the freight with respect to a certain consignment.

Firstly, check whether a specific commodity rate (SCR) is quoted for a shipment; if not, then check whether a classification rate (CCR) is applicable, and if this is not the case, apply the general cargo rate (GCR). So the sequence of the application of different types of rates will be: SCR -> CCR -> GCR.



### **Exceptions**

In relation to the application sequence of above mentioned rates: SCR -> CCR -> GCR, there exist exceptions to the general rule.

Attention must be firstly paid to the minimum charge. If the rate calculated as above is smaller than the minimum charge, the minimum charge shall apply.

Secondly, in case of CCR, if the value of the shipment is higher than the carrier's liability limits (e.g. \$20 per kg in the Warsaw Convention system), the shipper usually declares the higher value of the goods in the air waybill, following which who will also pay a valuation surcharge to the carrier.

Thirdly, in the use of SCR, if the quantity rate for a certain weight break point is lower than the SCR, the quantity rate shall apply.

### **Basic charge rating (BRC)**

As from 1 April 1988, a new tariff structure is being applied to shipments within Europe. This new structure, called Basic Charge Rating, no longer has a minimum, but a Specific Commodity Rate or a General Cargo Rate.

For every shipment, there is a basic rate (€34.03) plus a kilogram rate per destination. The kg rates are related mainly to the distance.

### **Minimum charges**

For the transportation of every shipment, regardless of weight or volume, a minimum charge applies from any point of origin to any point of destination. Below this minimum charge it would be uneconomical for the airline to transport a consignment, taking into account the fixed costs involved in handling the small package.

The minimum charge should be taken, as soon as the freight, calculated on the basis of the chargeable weight and applicable rate, becomes less than the set minimum. The freight charge therefore will never be lower than the published minimum charge.

The minimum charges vary among the Conference Areas within or between which the transportation is executed.

### **Specific commodity rates (SCR)**

In order to stimulate regular transportation of large shipments, airlines quote special rates for specifically designated goods or groups of goods between specifically designated points. They are lower than the general cargo rates (normal rates). In the application of SCR, a set minimum quantity of the goods must be taken into account.

A given commodity and its rate will be filed by the airline to IATA who in turn will obtain permission to apply that commodity rate on a given route to the relevant countries' governments.

The commodities, for which a specific commodity rate is published, are divided into ten main groups, which in turn are subdivided into a series of 100 subgroups.

**Main groups**

<b>ARTICLE</b>	<b>COMMODITY GROUP</b>
0001 - 0999	Edible animal and vegetable products
1000 - 1999	Live animals and inedible animal and vegetable products
2000 - 2999	Textiles - Fibres and Manufactures
3000 - 3999	Metals and manufactures, excluding machinery, vehicles and electrical equipment
4000 - 4999	Machinery, vehicles and electrical equipment
5000 - 5999	Non-metallic minerals and manufactures
6000 - 6999	Chemicals and related products
7000 - 7999	Paper, reed, rubber and wood manufactures
8000 - 8999	Scientific, professional and precision instruments, apparatus and Supplies
9000 - 9999	Miscellaneous

Then the **main group** is subdivided into **subgroups**, for example:

0001 - 0999	Edible animal and vegetable products
0001 - 0099	Foodstuff, spices, beverages
0100 - 0199	Beverages, coffee, tea
0200 - 0299	Dairy products, Eggs, Ice Cream
0300 - 0399	Fish and Seafood, Frogs
0400 - 0499	Fruits, berries, melons (fresh, dried, candied, canned), jams, jellies
0500 - 0599	Grains and grain preparations, cereal foods
0600 - 0699	Meat, slaughtered poultry and game, sausages, meat pies
0700 - 0799	Roots and spices, flavouring powder
0800 - 0899	Vegetables, salad dressing, sauces, relishes, vinegar, yeast
0900 - 0999	Miscellaneous edible animal and vegetable products which could not be classified between 0001 and 0899

**Class rates (Commodity Classification Rates - CCR)**

Commodity classification rates also apply to specifically designated goods or groups of goods. CCR is not for transportation between specifically designated points, but within a certain area e.g. a Conference Area (1 or 2 or 3) or between two areas, for example between Conference Area 2 and Conference Area 1. It is important to know where the places are – in which conference area or sub area.

CCR may be lower or higher than the General Cargo Rates (GCR). They are expressed as a percentage of the latter.

If no minimum rate is indicated for a CCR, the minimum as published in the GCR applies.

If there is no Specific Commodity Rate available for the specific commodity, the class rate must be applied to the consignment.

The main commodities to which CCR applies are such as:

- live animals (surcharge)
- valuable shipments (surcharge)
- newspapers (reduction)
- unaccompanied baggage (reduction)

### **General cargo rate (GCR)**

General cargo rate (GCR) applies for the carriage of commodities in general. Shipments for which no specific commodity rate or class rate applies, must be charged at the GCR. There are certain commodities for which there are no special rates available. In addition, special rates are not offered between every point of origin and destination.

Usually, the calculation of freight fee is based on the chargeable weight and the GCR.

Freight charge = package chargeable weight x GCR per lb/kg.

The GCR is often quoted on the basis of two categories:

- a. for shipments up to a weight of 45 kg and
- b. for shipments with a weight of 45 kg or more.

### **Quantity rate and Normal rate**

#### **Normal rate**

Normal rate is the specified general cargo rate without any quantity discount. As in GCR, it is usually defined on the basis of two categories: Under the 45 kg rate or, if no under 45 kg rate exists, then the under the 100 kg rate (air cargo) applies.

The Normal rate is sometimes called Normal General Cargo Rate. The Normal rate is used as opposed to the quantity rate.

#### **Quantity rate**

When shipments meet certain weight requirements, a rate which is lower than the normal rate is often given. This is the quantity rate.

IATA tariffs are increasingly ignored on many of the major routes due to competition but are still relevant for many lesser developed markets and continue to provide a general guide line.

For most commodities a charge per kilo of cargo is applied (subject to a minimum charge) with discounts for volumes over 100 and 500.

It currently works as follows:

- Minimum IATA Charge
- Normal rate (per kg)
- Quantity rate (over say 100 kilos)
- Quantity rate (over say 500 kilos).

### **Other rates and charges**

#### **Add-on amounts**

The rates mentioned before can only be calculated if direct rates are published from airport of departure to airport of destination. If the rate to a certain airport or destination is not published, then it is possible to "add on" a domestic rate to the final point of destination, or to a published rate in the country of destination. Such an amount can also be "added-on" in the case of departure country.

Additionally, specific handling charges etc. can also be added-on.

#### **Spot rates**

Spot rate is the rate agreed between the customer and the airline with regard to a certain shipment on a case basis. Customers can negotiate spot rates, special cargo rates including discounts on specific routes for specific shipments.

#### **Possibility of prepayment instructions**

The carrier may include a statement in his conditions of carriage, that he will not accept shipments on a cash-on-delivery basis. In this case, prepayment of the air freight is required. In the event of prepayment instructions, the carrier may cancel the carriage of any shipment upon refusal by the shipper to pay the charges without any liability for such cancellation.

#### **Possibility of combination of various sorts and groups of tariffs**

Seeing the various sorts and groups of rates, it is possible to combine them in application to a specific consignment. In the carriage that may involve more than one air segment, the sort of tariff rates applicable to the different segments may all apply to the same shipment, up to the segment that the specific rate is valid for.

**Questions**

1. *What is the right sequence in which to apply the following rates? Please indicate*

M - Minimum charge	4
SCR = Specific commodity rates	1
GCR = General cargo rates	3
CCR = Commodity classification rates	2

2. *Which description fits which rate/charge below? Please indicate.*

Tariff applying to shipments within Europe as per April 1988	BCR
Tariff for large shipments, between specifically designated points	SCR
Tariff for specifically designated goods, in or between Conference areas	CCR
Tariff for all shipments to which no special or classification rates apply	GCR
Specific handling charges added to the normal rate	Add-on amounts
Tariff applying to the shipment which is larger than the freight calculated on the basis of chargeable weight	Minimum charge

3. *To export toys, the forwarding company looks up the airline's published rate. There is a rate that applies to toys below 45kg, the rate for between 45kg and 100kg, and the rate for over 100kg, which is cheaper than the former two rates. What is this rate called for cargoes over 100kg?*

- a. Normal rate
  - b. Spot rate
  - c. General cargo rate
  - d. Quantity rate
- (d)

#### 4.4.4 Exercise Examples

##### Learning objectives

The student should learn how to calculate the chargeable weight, applicable rate and the air freight in real business cases.

##### Questions:

###### *1: Minimum Rate*

There is one box to be shipped by air from Amsterdam to Nairobi. Contents are toys. Gross weight is 1.8 kg. Box dimensions are 60 x 10 x 10 cm.

- a) What is the chargeable weight?
- b) What is the applicable rate?
- c) What are the weight charges?

##### *Answers:*

- a) Determine the chargeable weight:  
Gross weight is 1.8 kg, rounded to 2.0 kg.  
Volume weight =  $60 \times 10 \times 10 / 6.000 = 1.0$  kg.  
The answer is therefore 2.0 kg.
- b) Determine the applicable rate:  
The commodity of toys doesn't have an SCR or CCR, therefore the GCR applies. Looking at the TACT tariffs, we know that the GCR for weight between 1 and 45 kg is € 29.85.
- c) Determine the air charge:  
Freight charge = chargeable weight x applicable rate. I.e.  $2 \times €29.85 = €59.70$ .

**But**, a further look at the TACT tariffs for the shipment between Amsterdam and Nairobi reveals that there is a minimum charge set at €68.07. If the freight charges calculated on the basis of the chargeable weight are lower than the minimum charge, the minimum must be calculated.

The weight charge is therefore, €68.07.

*2: Basic Charge Rating (BCR) within Europe*

One shipment consisting of two boxes, containing ladies wear with a gross weight of 10 kg per box and dimensions 2 x 60 x 40 x 30 cm per box, must be shipped by air from Amsterdam to Hamburg by KLM.

For each shipment, there is a basic rate (€34.02) plus a kg rate per destination.

(The principles of basic charge rating are: no minimum rate; no specific commodity rate and no general cargo rate. The commodity classification rate however, if any, does apply.)

- a) What is the chargeable weight?
- b) What is the applicable rate?
- c) What are the weight charges?

*Answers:*

- a) Determine the chargeable weight:  
Gross weight = 2 x 10 kg = 20 kg.  
Volume weight =  $2 \times 60 \times 40 \times 30 / 6,000 = 24$  kg.  
The answer is therefore 24 kg (whichever is higher).
- b) Determine the applicable rate:  
Hamburg is in Europe. The basic rate (for the whole shipment) is €34.02 plus a kg rate of €1.45 per kg. The kg rate is available from the airline's airfreight publications.
- c) Determine the air charge:  
The weight charges = the basic rate + kg rate = €34.02 + 24 x €1.45 = €68.82

*Exercise 3: Specific Commodity Rate (SCR)*

A shipment consisting of a motorcycle and a box of bike parts, with a total gross weight of 70 kg; with the following dimensions: 100 x 50 x 60 cm and 70 x 60 x 50 cm must be sent by air from Amsterdam to Nairobi by KLM. All special commodity rates are divided into goods groups, which are subdivided into specifically designated goods and again into specific items.

- a) What is the chargeable weight?
- b) What is the applicable rate?
- c) What are the weight charges?

The rates for the main group are lower than the published General Cargo Rates; the rates for the subgroup are in turn lower than those for the main groups and those for the specific groups are in turn lower than those for the subgroup.



These rates are published between specifically designated points (places). With each published rate a minimum number of kg is stated, for instance: 45; 100; 300 etc.

*Answers:*

**First**, look up in the TACT, Section 4: HEADLINE CITY – i.e. Amsterdam to SIDELINE CITY – i.e. Nairobi.

**Second**, consult the main group for motorcycles: = 4000 - 4999 = vehicles. Consult the subgroup 4235 and study well what it says there.

The description of the various numbers follows below.

- ITEM: 0230 EGGS.
- 1024 LIVE FISH, INEDIBLE, INCLUDING AQUARIUM OBJECTS SUCH AS CORAL, FISH FOOD AND WATER PLANTS, EXCEPT AQUARIUMS AND AQUARIUM APPLIANCES.
  - 1400 FLORIST AND NURSERY PRODUCTS AND BULBS, FLOWERS, SEED AND TUBERS.
  - 2199 YARN, THREAD, FIBRES, TEXTILE, TEXTILE MANUFACTURES AND CLOTHING AND FOOTWEAR.
  - 4235 MOTOR SCOOTERS AND MOTORCYCLES, PARTS OR SPARES AND ACCESSORIES OF BOATS AND VEHICLES AND MOTORISED AGRICULTURAL MACHINES EXCEPT PARTS AND SPARES OF STEAM AND/OR MOTOR VESSELS.
  - 4402 ELECTRICAL EQUIPMENT AND/OR APPLIANCES EXCEPT FOR BUSINESS MACHINES.  
- CONFERENCE AREA 1 - 2 (NORTH ATLANTIC).  
ELECTRICAL APPLIANCES EXCEPT FOR BUSINESS MACHINES AND WATCHES WORN ON ONE PERSON.

Under 4235, motorcycles are mentioned (among others). That leaves us with motorcycle parts. Parts and accessories are automatically included unless they are specifically excluded.

- a) Determine the chargeable weight:  
The total gross weight is 70.0 kg.  
The total volume weight is  $100 \times 50 \times 60 / 6,000 + 70 \times 60 \times 50 / 6,000 = 85 \text{ kg}$   
The chargeable weight is 85 kg (whichever is higher).
- b) Determine the applicable rate:  
In this case there are two possibilities:
  - 1) GCR at 45 kg or more =  $\text{€}10.98 \times 85 \text{ kg} = \text{€}993.30$   
or

2) SCR, namely 4235 with a min. of  
 $100 \text{ kg} = 100 \times \text{€}6.95 = \text{€}695.00$

3) Determine the air charge:

From the calculation of GCR and SCR above we can easily see, the weight charge will be €695.00, which is the cheapest rate for the client.

(Note: If, the chargeable weight is lower, say 60.0kg, which results in the GCR at  $60 \times \text{€}10.98 = \text{€}658.80 < \text{€}658.80$  (SCR 4235), then the weight charge finally will be €658.80. The higher SCR 4235 at €695 will not be used.)

### Questions

1. A shipment consisting of two packages is shipped from X to Y on one waybill at one rate.

Package A: gross weight 30.4 kg; dimensions 30 x 40 x 50 cm; Package B: gross weight 30.0 kg; dimensions 60 x 70 x 80 cm. The breakpoint is 6,000  $\text{cm}^3$  per kg. What is the chargeable weight?

- a. 56.0 kg
- b. 60.5 kg
- c. 66.0 kg
- d. 61 kg

(c)

*Elaboration:*

Total gross weight of A + B =  $30.4 + 30.0 \text{ kg} = 60.4 \text{ kg}$ , rounded 60.5 kg.

Total volume is  $(30 \times 40 \times 50 \text{ cm}) + (60 \times 70 \times 80 \text{ cm}) = 396,000 \text{ cm}^3$

Total volume weight =  $396,000 / 6,000 = 66 \text{ kg}$

Chargeable Weight = 66 kg.

2. There is one box to be shipped from Amsterdam to Nairobi. According to the published air freight, the minimum charge for a shipment between the two mentioned airports is €68.07. The box is weighed at 3.55kg, and the dimensions are 50 x 40 x 20 cm. The box contains toys. The general cargo rate of toys is €29.85 for weight between 1kg and 45kg. There is no specific commodity rate or commodity classification rate for toys. What will be the weight charges for this shipment?

- a. €208.95
- b. €68.07
- c. €119.4
- d. €106

(a)

*Elaboration:*

*Actual gross weight is 3.55 kg => 4 kg*

*Total volume is 50 x 40 x 20 cm = 40,000 cm<sup>3</sup>*

*Volume weight is 40,000 / 6,000 = 6.67 kg => 7 kg*

*Chargeable Weight is 7 kg*

*Weight charge is 7 x 29.85 = €208.95*

*(Weight charge is larger than the minimum charge €68.07.)*

## 4.5 Geography in Air Transport

### Learning objectives

The student should have knowledge on the IATA Traffic Conference Areas and city / airport codes.

The student should be able to read time tables.

The student should know how air traffic routes should be elaborated.

### 4.5.1 Airports

#### Learning objectives

The student should be aware of the main differences between local airports and international airports.

#### Local Airport

A local airport is an airport which handles only domestic flights or flights within the same country. Local airports don't have customs and immigration facilities and are therefore incapable of handling flights to or from a foreign airport. These airports normally have short runways which are sufficient to handle short/medium haul aircraft and regional air traffic.

#### International airports

An International airport is an airport where flights from other countries land and/or take off. Such airports are usually larger, and often feature longer runways and facilities to accommodate the large aircraft commonly used for international or intercontinental travel. International airports often host domestic flights in addition to international flights. In many smaller countries most airports are international airports. Many international airports also serve as "hubs", or places where non-direct flights may land and cargoes may switch planes. International airports often have many airlines represented, and many of these are often foreign.

**Question**

1. Domestic airports are different from international airports in many respects. Which features below are incorrect?

- a. Domestic airports usually have shorter runways than international airports
- b. Domestic airports always have customs and immigration facilities as the international airports
- c. International airports may host foreign airlines while domestic airports will never do so
- d. International airports often host domestic flights as well

(b)

**4.5.2 Traffic Conference Areas**

**Learning objectives**

The student should have knowledge about what the traffic conference area is, its origin and the reason for having traffic conference areas.

Traffic conference areas are divisions of the world used for the purposes of fare construction.

The Bermuda Agreement reached between the U.S. and U.K in 1945 established the principle that carriers should make agreements concerning fares and rates, which would then be subject to the approval of the governments concerned. It was also agreed that IATA conferences would be the forum for negotiating agreements on fares and rates. Following that, nine different regional conferences in IATA were established, coordinated by a smaller body of senior industry executives representing the overall view of the industry. It quickly became apparent however that this approach was impractical seeing the difficulty in reaching a universal agreement among the nine regional conferences due to the unilateral action and the frequently incompatible agreements reached among them.

The system of Conferences was rearranged and three Conference Areas were established – TC1, TC2, TC3 – which collectively cover the world. This system is still in operation.

To enable the conference system to work in regard to the air tariff construction, airlines have been granted a special exemption by each of the main regulatory authorities in the world to consult prices with each other. However, the organization has been accused of acting as a cartel, and many

low cost carriers are not full IATA members. The European Union's competition authorities are currently investigating the body. In the United States, the Civil Aeronautics Board (CAB) accepted the utility of Tariff Coordination in many markets but removed anti-trust immunity from the North Atlantic region.

At Traffic Conferences, transport problems that are not yet amenable to global uniformity are dealt with. These Conferences are autonomous and can therefore, within the framework of their competence, pass resolutions which are valid within their areas.

#### 4.5.3 IATA Areas and City/Airport Codes

##### **Learning objectives**

The student should have knowledge of the three traffic conference areas as divided in IATA, and understand how the city/airport codes are formed.

##### **IATA Areas**

IATA divides the world into three traffic conference areas:

1. **Traffic Conference 1** (TC1 - Secretary in Montreal)  
North, Central and South America and the eastern part of the Pacific
2. **Traffic Conference 2** (TC2 - Secretary in Geneva)  
Europe, the Near East up to Iran and all of Africa\*
3. **Traffic Conference 3** (TC3 - Secretary in Singapore)  
Asia, Australia, New Zealand and the (western) islands of the Pacific Ocean

The three main IATA areas are further sub-divided into sub-areas. Examples are:

- TC1: the Caribbean sub-area, Mexico sub-area, "Long Haul sub-area, South American sub-area etc.
- TC2: Europe sub-area, Africa sub-area, Middle East sub-area.
- TC3: South Asia Sub-continent, Southeast Asia, Southwest Pacific, Japan and Korea.

##### **Airport (City) Code**

Regardless of the size of the airport, all cities in the world that have an airport have assigned a three-letter code that is used in the labelling of

luggage and cargo to identify the point of destination. The city code is the same as the airport code.

If the city has more than one major airport, codes are then given to identify the airports – the major airport shares the same code as the city - and in such a case, the cargo must be labelled with the airport code instead of the city code.

1. Many codes are made up of the first three letters of the place name:

ATHENS = ATH	DUSSELDORF = DUS
MEXICO = MEX	SINGAPORE = SIN
RIO DE JANEIRO = RIO	TUNIS = TUN

There are cases where several place names start with the same three letters, or that two places in different countries may have the same name:

MANCHESTER = MAN	MANILLA = MNL
BARCELONA = BCN (Spain)	BARCELONA = BLA (Venezuela)

2. Because of the large number of place names encoded ( $\pm 5,000$ ), it is also unavoidable that there are codes of which one or more letters do not occur in the place names:

MONROVIA = MLW	LOS ANGELES = LAX
MALAGA = AGP	ABU DHABI = AUH

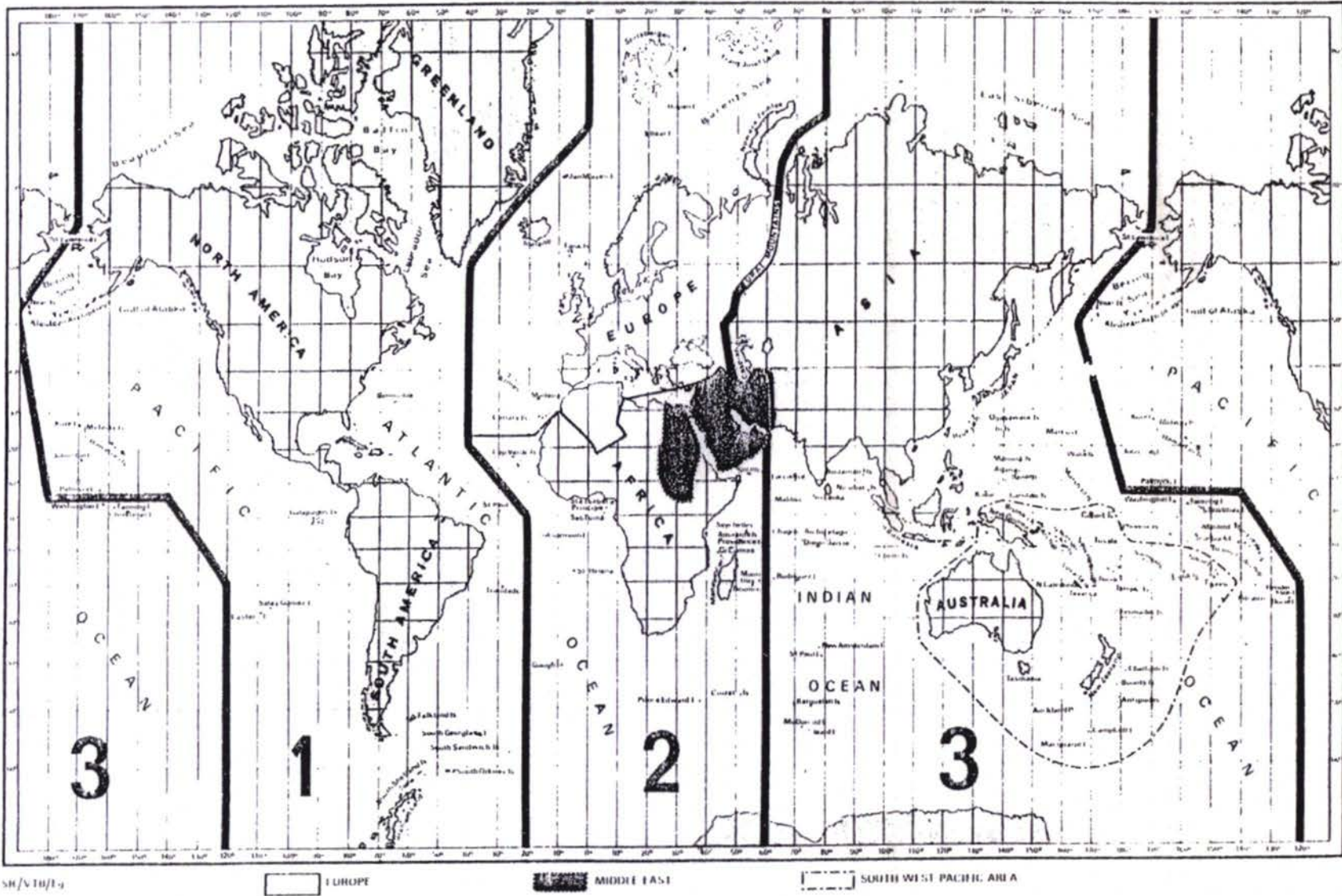
3. All place names in Canada have three-letter codes starting with Y:

QUEBEC = YGB	MONTREAL = YMX
WINNIPEG = YWG	TORONTO = YYZ

4. Large cities have separate codes for the city and for the city's airport(s):

LONDON city = LON	PARIS city = PAR
HEATHROW airport = LHR	ORLY airport = ORY
GATWICK airport = LGW	LE BOURGET airport = LBG
NEW YORK city = NYC	CH. de GAULLE airport = CDG
JF KENNEDY airport = JFK	
LA GUARDIA airport = LGA	

### IATA TRAFFIC CONFERENCE AREAS





**Questions**

1. Which group of countries belongs to which Traffic Conference? Please indicate.

North America	TC 1
South America	TC 1
Eastern Pacific	TC 1
Europe	TC 2
Middle East	TC 2
Africa	TC 2
Asia	TC 3
Australia	TC 3
Western Pacific	TC 3

2. True or False?

- City/airport codes are internationally determined by IATA (T)
- City/airport codes are three digit alpha – numeric codes (F)
- Many city/airport codes are made up of the first three letters of the city/airport name (T)
- If the city has more than one major airport, the labelling of cargo must use the airport code instead of the city code (T)

**4.5.4 How to Read Timetables**

**Learning objectives**

The student should learn how to read time tables in air transport.

Airline timetables provide information to passengers and other users about the schedules, fleet, security, restriction, contact information of the air flights and alike. Timetables used to be produced only in booklets, however online publication over the internet is becoming more and more popular.

Scheduling the right flight can be a daunting task, especially for complex international air cargo shipments. Published timetables will soon be incorrect since there is a degree of change within any thirty-day period. Many air cargo forwarders therefore use software tools with frequently updated databases, to support their planners in looking up airplane and trucking schedules or arranging air cargo modes and routes. In doing so, the following issues are often taken into account: code shares, cargo-only

flights, traffic restrictions, including / excluding certain carriers or certain equipment types and eliminating or limiting to specified airport connections.

### **ABC and ORG**

Good examples of the online resources for the flight tables are:

- <http://www.oag.com>
- <http://www.pathfinder-web.com>.

OAG is a global travel and transport information company. It publishes flight timetables both in hard copy and electronic products including CD-ROM and online services. Among the hardcopies, well-known are the ABC World Airways Guide (ABC) and the OAG Official Airline Guide (OAG).

ABC is a blue and red Book, consisting of two sections, namely:

- Blue: A – M
- Red: N – Z

The ABC Air Cargo Guide has only one section which is in orange, and contains published cargo flights alone.

In reading the ABC, read the “General Information” first – where can I find what? A good explanation is given there such as: How do I read this information and what does it mean?

OAG is used mostly in the USA and Canada. In principle, it is the same as the ABC.

### **Question**

#### *1. True or False?*

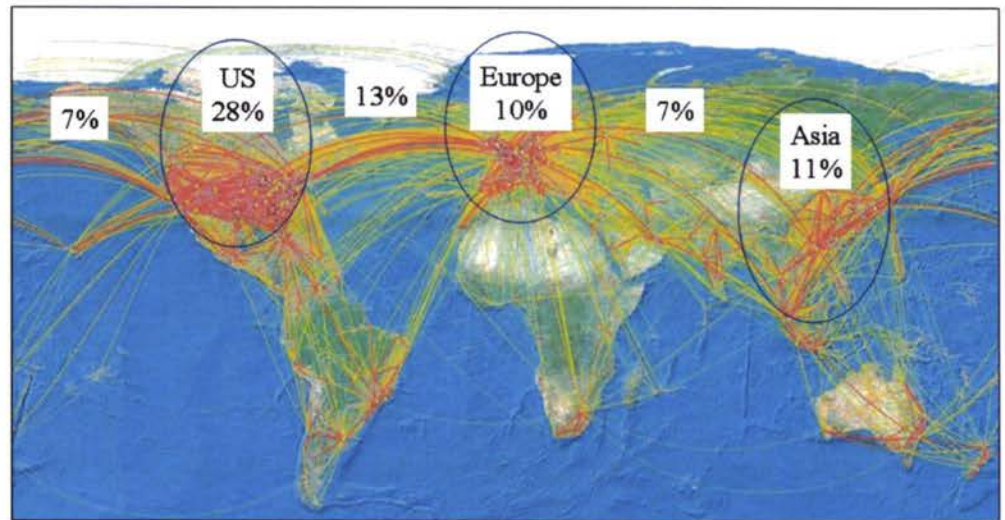
- Timetables provide information to air users about the flight schedules, fleet, security and other related information (T)
- Timetables can be published in booklets, on CD-Roms, or online. (T)
- Despite the frequent changes of published timetables, the air cargo forwarders still do not need to use software tools with frequently updated databases to arrange the best possible air cargo modes and routes – reference to the air cargo guide is sufficient (F)
- ABC World Airways Guide (ABC) and OAG Official Airline Guide (OAG) are two well known air cargo guides with flight timetable information. (T)

#### 4.5.5 Elaboration of Air Traffic Routes

**Learning objectives**

The student should know how air traffic routes should be elaborated.

The picture below shows the world main air traffic routes (2001).



Air traffic routes are evolving continuously due to changing world trade patterns, the (re)construction of airports, traffic control and safety issues and political developments, open skies agreements and landing rights etc.

Freight forwarders may also design new air traffic routes as links in multi modal transport chains. For example in the sea-air concept money is saved during the maritime leg while time is saved during the air leg. The total result might be therefore cheaper than full-air transport and faster than full-sea transport.

An example can illustrate the efficiency in designing the new traffic route: the route Singapore – Antwerp, with transshipment in Dubai. Full sea transport Singapore - Antwerp (containerised) takes approximately 20 days. The sea - air alternative of Singapore - Dubai by ship (containerised) takes about 10 days, followed by intermediate handling in Dubai (the Dubai airport is located near the port and facilitates rapid sea-air transfer) and by a flight Dubai - Antwerp (palletised), which takes 1 day. The total time saved in this case is approximately 9 days.

**Question**

1. *Among the following descriptions of air traffic routes, which is incorrect?*

- a. Due to the changes of world trade patterns, air traffic routes may also change
- b. Once set, the air traffic routes around the world remain unchangeable
- c. Traffic control and safety issues may lead to a sudden change in air traffic route
- d. Forwarding companies may design new air traffic routes in multimodal transport chains to save the cost and time in cargo transport

(b)

## ANNEX 1 The Warsaw Convention

The Warsaw Convention provides, among others:

- the transportation document (air waybill);
- the right of disposal of the sender and the receiver;
- the carrier's liability and
- the right to claim.

### Sender's right of disposal

The sender may dispose over the shipment up to the arrival of the goods at the destination. He can exercise this right only upon presentation of his original copy of the waybill.

(He can have the goods held up pending closer instructions, change the destination and/or address, request return to his address etc.).

### Receiver's right of disposal

The sender may dispose over the shipment after arrival of the goods at the destination (he may be notified of its arrival by telephone and/or in writing; sometimes receivers give specific instructions on how to deal with all shipments arriving for them by means of transfers to shippers.)

### Carrier's liability

The carrier is liable for all damages arising from damage, delay and loss due to negligence of the carrier. If the provisions of the Convention apply, then it is up to the carrier to prove that the damage was not caused by negligence on his part, but by force majeure, for instance. The carrier's liability is limited to U.S. \$ 20.00 per kg.

However, the carrier may be held liable without limitation if:

- gross negligence or wilfulness on the part of the carrier is proven;
- if no waybill is present when the shipment is stored;
- if the waybill was not completed in full.

### Value for transport

By stating a "value for transport" for shipments with a value exceeding U.S. \$ 20.00 per kg gross, the sender can raise the carrier's liability to this stated amount. In this case a value surcharge of 0.5% is payable. Some exceptions are possible.

Little use is made of this option, as the sender can cover his risks better and often even at a lower premium by insuring the shipment on the waybill. This facility is offered by many airlines.

## **ANNEX2 Classification of Dangerous Substances**

### **Class I**

Explosives, subjects and substances to be divided into:

- objects and substances with risk of mass explosion;
- objects and substances with risk of fragmentation, but without risk of mass explosion;
- objects and substances with risk of fire as well as slight shock wave effect or slight fragmentation or both, but without risk of mass explosion;
- objects and substances without danger worth mentioning;
- very insensitive substances with risk of mass explosion.

### **Class II**

Compressed, liquefied, pressurised gases or deep-frozen gases.

### **Class III**

Flammable liquids

### **Class IV**

Combustible solids, substances prone to self-ignition and substances that develop gases upon contact with water, divided into:

- combustible solids;
- substances prone to spontaneous combustion;
- substances that develop gases upon contact with water.

### **Class V**

Oxidising substances and organic peroxides, divided into:

- substances that stimulate combustion (oxidising substances) other than organic Peroxides;
- organic peroxides.

### **Class VI**

Toxic substances that present a risk of contamination, divided into:

- toxic substances;
- substances that present a risk of contamination.

### **Class VII**

Radioactive substances.

**Class VII**

Corrosive substances.

**Class IX**

Other dangerous goods (including magnetic materials, articles that may damage parts of the aircraft and goods that possess other specific properties that make them unsuitable for transport by air unless they are responsibly prepared for dispatch).

**ANNEX 3 Dangerous Substances Labels and Pictures**

**Label explanation and label pictures**

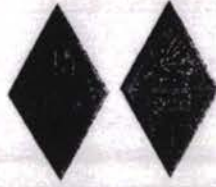
Heading	Colour	Code	Details
	<b>LABEL</b>	<b>RXS</b>	
EXPLOSIVE	ORANGE		LABEL FOR EXPLOSIVE SUBSTANCES, AMMUNITION
NON-FLAMMABLE COMPRESSED GAS	GREEN	RNG	LABEL FOR OXYGEN/CARBON DIOXIDE CYLINDERS ETC
POISONOUS TOXIC GAS	WHITE	RPG	LABEL FOR POISONOUS GASES CARBON DIOXIDE
FLAMMABLE LIQUID	RED	RFL	LABEL FOR COMBUSTIBLE LIQUIDS PETROL
FLAMMABLE SOLID	RED/WHITE (STRIPES)	RFS	LABEL FOR COMBUSTIBLE SUBSTANCES – PHOSPHORUS ETC
SPONTANEOUSLY COMBUSTIBLE	WHITE/RED	RSC	LABEL FOR SPONTANEOUSLY COMBUSTIBLE SUBSTANCES, E.G. CALCIUM
DANGEROUS WHEN WET	BLUE	RFW	LABEL FOR E.G. BIPHOSPHORUS
OXIDIZER	YELLOW	ROX	LABEL FOR OXIDISING MATERIAL – MAGNESIUM POWDER
ORGANIC PEROXIDE	YELLOW	ROP	LABEL FOR ORGANIC PEROXIDE
POISON	WHITE	RPB	LABEL FOR POISONOUS SUBSTANCES ARSENIC
HARMFUL	WHITE	RHF	LABEL FOR BARIUM OXIDE, BROMOFORM; HARMFUL TO FOODSTUFFS



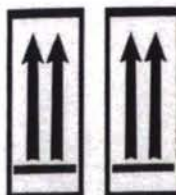
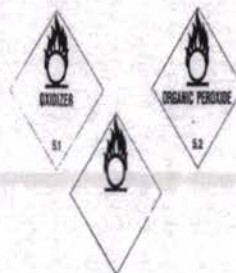
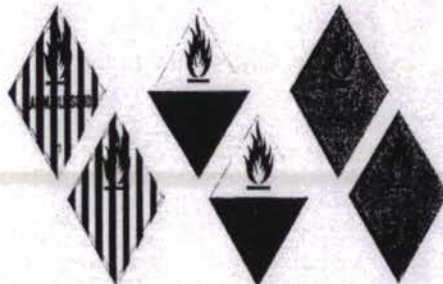
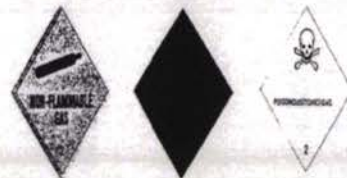
INFECTIOUS SUBSTANCE	WHITE	RIS	BIOLOGICAL MATERIAL: LIVE MICRO-ORGANISMS, VACINES
RADIOACTIVE I – II – III	WHITE I YELLOW II/III	RRW/ RRY	SELF-EVIDENT
CORROSIVE	WHITE/BLACK	RCM	LABEL FOR CORROSIVE SUBSTANCES (HYDROCHLORIC ACID ETC)
MAGNETIZED	BLUE/WHITE	MAG	SELF-EVIDENT
DANGER	ORANGE	CAO	DO NOT LOAD INTO PASSENGER PLANES CARGO AIRCRAFT ONLY



5 More of these labels exist with compatibility groups B,C,D,E and G, which indicate acceptable for cargo aircraft only.



Packages bearing either of these two labels are not acceptable for air carriage.




Packages bearing this label must not be loaded on a passenger aircraft.

Issued: 01/07

## ANNEX 4 Air Waybill

### 1. Responsibility for completion

Who is responsible for the completion of the air waybill?

According to the Warsaw Convention, the Hague Protocol and the Carrier's Condition of Carriage, the shipper must prepare the air waybill. It is the shipper who is responsible for the correctness of the particulars and statements relating to the goods inserted on the air waybill.

The shipper will be liable for all damages suffered by the airline, or any other person, due to irregularity, incorrectness or incompleteness of the said particulars and statements, regardless whether the air waybill is completed by himself/herself or his/her representative.

With his/her signature, the shipper confirms that he/she agrees to the Conditions of Contract.

It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIERS' LIMITATION OF LIABILITY Shipper may increase such limitation of liability by declaring a higher value for carriage and paying a supplemental charge if required

Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air, according to the applicable Dangerous Goods Regulations.

Signature of Shipper or his Agent

---

Although the shipper must prepare the air waybill, he may also, by means of written instructions, ask his representative to do so on his behalf.

Usually such a representative is either a freight forwarder or an airline employee.

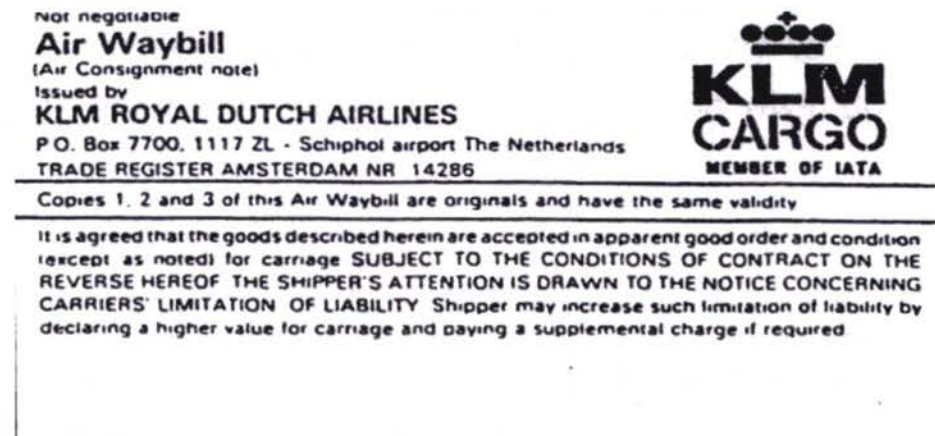
In that case the representative should also sign the air waybill on behalf of the shipper.

**2. Validity and duration of the contract of carriage**

The contract of carriage is valid when the air waybill is executed and signed by both the shipper or his representative and by the airline, or an IATA Cargo Agent acting on behalf of the airline. This implies that the air waybill should be issued immediately upon receipt of the goods, because as long as the air waybill has not been dated and signed, the conditions as per the Warsaw Convention and/or the Conditions of Carriage for goods, which a.o. limit the airline's liability, do not apply.

On the other hand no air waybill should be issued until the complete shipment has been received. The validity of the air waybill and thus the contract of carriage expires the moment the goods have been delivered to the consignee, as per the air waybill, against a clean receipt.

Any amendment of or addition to the information shown on the air waybill made by any participating airline subsequently to the initial issue must be made on all remaining copies of the air waybill. The airline making such an amendment/addition must identify itself and indicate the place where the amendment / addition is made.



**3. Definition of the term “Not Negotiable”**

The air waybill is a non-negotiable document, as printed on the air waybill. It means that the air waybill is a contract of transportation and does not represent the goods. As such the air waybill cannot be negotiated while the goods are being transported, by endorsing it to another party, who would then become the legal owner of the goods, as is the case with the Bill of Lading as used in ocean shipping.

**Name and address of issuing airline, are**

Under the words:           Not negotiable  
   Air Waybill

the name and address of the airline issuing the air waybill is printed.

To the right you find the airline's symbol or logo.

074- 5115 0002



#### 4. Significance of the AWB number

On both top corners and often also on the right hand corner at the bottom, you will find the air waybill number. It consists of two parts.

074 5115 0002

The first part is a three-digit code, called the prefix, which identifies the airline. The second part is the individual consignment serial number of no more than 8 digits. The space between the fourth and fifth digit (5115 0002) has no other meaning but to facilitate reading.

At KLM (and also most of the other airlines) the serial numbers consist of 8 digits, composed in such a way that the remainder, after dividing the first seven digits by 7, is identical to the eighth digit.

#### EXAMPLE:

The AWB. number is 5115 0002

If you divide the first seven digits 5115 0002 by 7, you get a remainder of 2, which is equal to the eighth digit 2.

Can you explain which would be a correct AWB number on stock, 5115 0013 or 5115 0003?

### 5. Air Waybill issued by IATA Cargo Agents

If the AWB is issued by an IATA cargo agent, he/she will retain the original copies no. 3 (for shipper) and no. 1 (for issuing carrier) and copy no. 9 (for agent). The original copy no. 3 will be given to the shipper, while the original copy no. 1 is presented to the issuing carrier, together with his/her periodical sales report, listing all the airline's air waybills issued by that agent during a certain period.

Note that the removal of more copies than one is entitled and may delay the (re)forwarding of a shipment due to lack of sufficient air waybill copies. Therefore, in case extra copies are required, only use the additional extra copies, or if not available anymore, just make extra photocopies.

### 6. AWB sample

Below is the explanation of each component on the airway bill. A sample of an airway bill from KLM is attached hereafter.

- Box 1** The three-letter code of the City or Airport of Departure is inserted here.
- Box 2** The name, address, city and country of the shipper must be inserted, also the shipper's telephone number if so indicated.
- Box 3** For optional use by the issuing carrier.
- Box 4** The name, address, city and country of the consignee to be inserted, with the consignee's telephone number if known.
- Box 5** For optional use by the delivering carrier.
- Box 6** The name and city of the carrier's agent entitled to the commission is to be mentioned here. In our case KLM Export Dept. at Schiphol is involved.
- Box 7** Agent's IATA code number is inserted here. Box 6 refers.
- Box 8** For optional use by the issuing carrier.
- Box 9** The airport of departure and any requested routing are to be mentioned here.  
The 3-letter city code may be used.
- Box 10** Method of payment, e.g. cash, cheque or MCO is inserted here.
- Box 11** The name of the first carrier, preferably in full, is to be inserted.  
The use of the other boxes is optional.
- Box 12** The appropriate IATA 3-letter currency code corresponding to the currency in which the airwaybill is issued must be mentioned here. In our case this is the Euro (€).
- Box 13** Is for use by carrier's accounting offices only.
- Box 14** Indicate with an "x" whether the weight charges at origin are prepaid or collect (prepaid = payment at origin, collect =

payment at destination).

- Box 15** Like box 14, but here the “x” has to be put against prepaid or collect for other charges.
- Box 16** The value for carriage as declared by the shipper must be inserted here. In case there is no value declared, NVD (No Value Declared) has to be entered.
- Box 17** Here the shipper can declare the value for customs purposes. In case no value has to be declared, write “NVD” here.
- Box 18** The name of the town or airport of destination has to be inserted in full.
- Box 19** For optional use of carriers.
- Box 20** The amount to be insured, upon request of the shipper, has to be mentioned here. In our case no insurance is required.
- Box 21** All handling information, e.g. marks, numbers and method of packing must be inserted here. Moreover, accompanying documents, address etc., person to be notified and other related information.
- Box 22** Consignment detail and rating:
- The number of packages is inserted here. If more than one figure is mentioned here, the total number of packages must be inserted below the “total” line.
  - In case rate combinations have been used, the rate construction point (3-letter city code) must be stated. In our case this does not apply at all.
  - Here the actual gross weight of the total number of packages is stated.
  - Here a “K” or an “L” will have to be inserted, depending on whether the gross weight given in “c” is expressed in kilograms or pounds.
  - This is the “rate class” indication. The transport charge of the camera is based on the minimum charge of €68.07 (see page 4-4). For clarity, the letter “M” for minimum charge must be entered.
  - This box is only to be completed if a Specific Commodity Rate or Class Rate involving a reduction or surcharge has been applied. This is not the case with the camera, so this box can be left blank.
  - Due to the Minimum Charge this box can be left blank.
  - The Minimum Charge of €68.07 must be inserted here. The currency code is already mentioned in box 12.
  - The same amount must be shown in this box.
  - Reads: “one camera for repair” MADE in Japan.
- Box 23** Total prepaid weight charge is €68.07.

- Box 24**      To be left blank since no valuation charge is involved.
- Box 25**      The AWB is issued by KLM Export Schiphol and the AWB fee of €13.50 is due to KLM, which is mentioned here as: AWB 13.50. For clearance and handling (also performed by KLM Export) a total amount of €44,50 is involved; this amount is shown as: €44.50.
- Box 26**      No agent is involved, so box 26a is left blank. Box 26b will show 58,00 (= total box 25).
- Box 27**      Here the columns above are added up (23 + 24+ 26), totalling €208, our shipment being prepaid.
- Box 28**      Would show total charges in case of a charges collect shipment.
- Box 29**      The signature of the shipper or his/her agent must be inserted here.
- Box 30**      The place and date of execution of the AWB. is inserted here, with signature of the carrier or his/her agent.



Example of an air waybill from KLM Cargo:

074. 1. 8794 5012

074- 8794 5012

Shipper's Name and Address 2.		Shipper's Account Number 3.		New destination <b>Air Waybill</b> Air Comprehension note issued by <b>KLM ROYAL DUTCH AIRLINES</b> P.O. Box 1700, 1111 Z, Schiphol airport, The Netherlands TRADE REGISTER AMSTERDAM A/R 14266 <b>KLM CARGO</b> NUMBER OF 1216																									
Consignee's Name and Address 4.		Consignee's Account Number 5.		It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted for damage) SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Shipper may increase such limitation of liability by insuring a higher value for carriage and paying a supplementary charge if required.																									
Issuing Carrier's Agent Name and City 6.				Air Transport Information 10.																									
Agent's IATA Code 7.		Account No. 8.																											
Airport of Departure (abbr. of first Carrier) and requested Routing 9.																													
By first Carrier 11.		By second Carrier 12.		Currency Code 13.																									
By third Carrier 14.		By fourth Carrier 15.		Estimated Value for Carriage 16.																									
By fifth Carrier 17.		By sixth Carrier 18.		Estimated Value for Customs 17.																									
Airport of Destination 18.		Flight Date 19.		Amount of Insurance 20.																									
Handling information 21.																													
<table border="1"> <thead> <tr> <th>No of Pieces PCP</th> <th>Gross Weight</th> <th>kg lb</th> <th>Rate Class Commodity Spec No.</th> <th>Chargable Weight</th> <th>Rate Charge</th> <th>Total</th> <th>Volume and Quantity of Goods (incl. Dimensions or Volume)</th> </tr> <tr> <th>a</th> <th>c</th> <th>d</th> <th>e</th> <th>f</th> <th>g</th> <th>h</th> <th>i</th> </tr> </thead> <tbody> <tr> <td>b</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>j</td> </tr> </tbody> </table>						No of Pieces PCP	Gross Weight	kg lb	Rate Class Commodity Spec No.	Chargable Weight	Rate Charge	Total	Volume and Quantity of Goods (incl. Dimensions or Volume)	a	c	d	e	f	g	h	i	b							j
No of Pieces PCP	Gross Weight	kg lb	Rate Class Commodity Spec No.	Chargable Weight	Rate Charge	Total	Volume and Quantity of Goods (incl. Dimensions or Volume)																						
a	c	d	e	f	g	h	i																						
b							j																						
Present Weight Charge 21.																													
Volume Charge 22.																													
Tax 23.																													
Total other Charges Due Agent 24.																													
Total other Charges Due Carrier 25.																													
Total present 26.																													
Total volume 27.																													
Currency Conversion Rates 28.																													
at charges in Dual Currency 29.																													
For Carrier's Use only at Destination Charges at Destination Total other Charges 30.																													

ORIGINAL 3 (FOR SHIPPER)

## ANNEX 5 Introduction to TACT Manuals

The Air Cargo Tariff, abbreviated TACT, is used as a tariff manual world wide (In the USA: Civil Aeronautic Board = CAB).

TACT consists of:      TACT - RULES (orange)  
                                 TACT - RATES - WORLD WIDE (green) Except  
North America  
                                 TACT - RATES - North America (red)

TACT Rules, the orange section, is issued bi-annually (usually in April and October). The green section of TACT Rates worldwide, except North America, is usually issued every two months, and so is the red section of rates for North America. Between these editions, bulletins are issued every month to keep it up to date.

### Contents of the TACT Rules

Editorial		
Table of Contents		
Alphabetical Index		
Section 1:      General Information.	}	White pages
Section 2:      Acceptance for Carriage		
Section 3:      Transportation Charges		
Section 4:      Services and Related Charges		
Section 5:      Payment of Rates and Charges and Currency Conversion		
Section 6:      The Air Waybill		
Section 7:      Information by Countries		Yellow pages
Section 8:      Carriers' Special Regulations		White pages

**Section 1** contains (amongst others) the Alphabetical Index, an important guide for beginners.

**Section 2** contains:

- Acceptance of Carriage, including Acceptance of Consignment; Responsibility of Shipper; Carrier's Liability;
- Shipper's documentation (= Shipper's letter of instruction): how this document must be completed;

- Acceptance of goods;
- Consignments ready for carriage;
- Restrictions in acceptance (e.g. live animals, small arms and ammunition etc.).

**Section 7** is Information by Countries, for instance import / transit / export regulations.

In subsection of 7.3.2 countries are alphabetically listed. A list of payment facilities is provided in subsection of 7.2.2 Charges Collect. (Read carefully – many exceptions.)

1) *Airport Information*

- a) Is an airport a Customs Airport?
- b) What facilities does the airport have?
  - equipment for loading and unloading;
  - storage facilities for, e.g., live animals (animal hotel); perishable goods (fruit, vegetables, meat);
  - valuable shipments (safe).
- c) What are the costs of storage?
- d) Customs office hours; is it possible to call on the customs office outside office hours? (In many cases, it isn't.)

2) *Import*

- a) General Information - packing.  
Some countries prohibit the use of hay and straw.
- b) The routing.  
Does the destination actually have an airport; if not, what is the nearest airport? For example: The consignee's address is Montreux in Switzerland. No airport; destination on AWB must be Geneva.
- c) If a certain airport is not a *Customs Airport*, how must the shipment then be flown in?
- d) Which language should be used on the waybill and on other documents (Venezuela)?  
Always English, but sometimes another language is also required.
- e) Which documents are sometimes compulsory?
  - Commercial Invoice, if necessary signed by the Chamber of Commerce or legalised by the consulate or embassy;
  - Certificate of Origin;
  - Import documents etc.

- f) Restrictions on goods.  
What must they comply with, e.g. live animals, mortal remains etc.
  - g) Prohibitions.  
(Read carefully from start to end.) These sometimes refer to a country or region the shipment comes from (origin).
  - h) Cost calculated for all sorts of facilities relating to import shipments.
- 3) *Transit*
- a) What is transit?
  - b) General information
  - c) Restrictions and Prohibitions.
  - d) Charges.
- 4) *Export*
- Charges for all sorts of acts, such as making up the waybill, customs documents, storage, additional charges for the handling of dangerous goods etc.

On top of all this, many airlines also have their own restrictions. This is in **Section 8: Carriers' special regulations.**

**TACT rates**

**TACT- rates North America**

**TACT- rates World Wide except N.A.**

(Red)			(Green)	
Table of Contents			Table of Contents	
Stop Press	White pages		Stop Press	White pages
Editorial			Editorial	
Section 1: Special Rates	Blue pages		Section 1: Special Rates	Blue pages
Section 2: Descriptions	White pages		Section 2: Descriptions	White pages
Section 3: Notes	Pink pages		Section 3: Notes	Pink pages
Section 4: Rates	White pages		Section 4: Rates	White pages
Section 5: Construction Rates	Yellow pages		Section 5: Construction Rates	Yellow pages
Section 6: Domestic Rates	White pages			

**References:**

1. An Introduction to Air Law, Diederiks-Verschoor, 6th edition, Kluwer Law International, 1997
2. Professional Education Program, Certificate in International Freight Forwarding Module 1, Semester 1, Canadian International Freight Forwarders Association Inc., 3rd edition, 2004
3. The Warsaw Convention vs. The Montreal Convention 1999 Article 18, Erasmus University
4. The Evolution of Chinese Regulation in light of World-Wide Framework on the Contractual Liability of Air Carriers, Erasmus University
5. International Air Cargo Transport Services: Economic Regulation and Policy, Leiden University, 1997
6. Liability of the Operators and Owners of Aircraft for Damage Inflicted to Persons and Property on the Surface, Leiden University, 2003
7. Text of “Convention for the Unification of Certain Rules Relating to International Carriage by Air (Montreal Convention)”, Signed at Montreal on 28 May 1999
8. <http://www.exportbureau.com>
9. <http://en.wikipedia.org>

**Reading:**

**“Types of Cargo in Air Transport”**

**General cargo**

This is cargo that presents no problem of any kind in regards to packaging/content and dimensions, e.g. textiles, cameras, shoes etc.

Obviously, not all shipments can simply be accepted for transport by air. One will have to check that the dimensions (length, width, height) of the package are not too large for the loading hatches (cargo space) of the type of aircraft in which it will be transported.

The packaging must be strong enough to withstand the transport and possible transfers. Sometimes loads do not need to be packed, e.g. valves, plastic or steel pipes etc.

**Special cargo**

This is cargo that requires special handling during storage and transport regarding the properties and value of the cargo. This includes the following types:

1. Live animals
2. Valuable shipments
3. Diplomatic baggage
4. Mortal remains
5. Perishables
6. Regulated goods (dangerous goods)
7. Wet cargo
8. Strong smelling goods
9. Large / heavy goods.

A short description of this type of cargo follows below.

1. *Live animals*

Code AVI

Exception for: AVB = live birds;

AVF = live tropical fish;

AVX = live chicks.

It is clear that the transport of live animals requires special attention and that there will be certain conditions and restrictions regarding acceptance, packaging etc.

Practically all animals can be transported in a cargo plane, except for very large or very heavy animals for which prior permission must be granted. Generally speaking, many kinds of animals can also be transported in the holds of passenger aircraft, provided they do not spread a (strong) smell.

The conditions of acceptance and the packaging specifications for practically all animals are listed in the Cargo Handling Manual.

One example of this type of cargo: Elephants, allowed only on cargo planes and

B747s. Age restriction: ± 12 months old; weight limit: ± 400 kg. Packaging in a strong box or crate that must meet a large number of individually listed

specifications.

2. *Valuable shipments*

CODE VAL

These are shipments with a value of \$ 1,000.00 per kg or more, as well as precious metals, bank notes etc. Such cargo is stored in a safe, which may be supervised by an Airport Security Service. This Service also takes care of the transport to and from the aircraft in security vehicles.

3. *Diplomatic baggage*

CODE: DIP

These are mostly very important confidential shipments between ministers, consulates and embassies. Storage may be done in a special warehouse section.

4. *Mortal remains*

CODE: HUM

Mortal remains are transported subject to special requirements regarding packaging and documentation. Moreover, these requirements can differ much depending on the country of destination.

5. *Perishables*

CODE: PER

Such shipments rely especially on air transport, and space is usually reserved beforehand. This applies to fresh meat, fruit, vegetables and the like. Newspapers also fall into this category.

6. *Regulated cargo*

Dangerous Goods Miscellaneous (see list).

Considering the nature of these goods, we need to go into more detail.

Class 1: Explosives

Class 2: Gases

Class 3: Flammable liquids

Class 4: Flammable solids

Class 5: Oxidizing substances

Class 6: Toxic and infectious

Class 7: Radioactive material

Class 8: Corrosives

Class 9: Miscellaneous

Such goods can be hazardous (e.g. through fire, explosion, leakage, radiation etc.) to:

- the people in the aircraft;
- the aircraft itself;
- the other cargo on board.

Such goods can only be transported by air and are subject to a number of restrictive conditions. It may be a cause of anxiety that all such dangerous goods such as -

- flammable substances,
- explosives,
- corrosive acids etc.

are transported in the belly of an aircraft; but it is taken into account that in the first place transport of *really dangerous goods* such as dynamite by air is refused outright. But revolver cartridges (small arms ammunition), petrol, sulphuric acid, arsenic etc. can most certainly be transported.

Transport by air is done almost exclusively in full cargo planes, but in some cases in passenger aircraft and combi planes. For all aircraft types, a maximum volume per package, protective packaging and a special label is prescribed. All conditions and restrictions on this kind of transport, as well as a list of more than 3,000 chemical substances, are listed in the "Dangerous Goods Regulations".

7. *Wet cargo*

CODE: WET

Think, for instance, of the transport of eels and meat.

In the case of eels, plastic is first put on the pallet and the eels are covered with wet blankets. For meat, plastic is first put on the pallet.

8. *Strong smelling goods*

CODE: SMELL

Depends on the nature of the cargo. Think, for instance, of French cheese, garlic, garlic oil or some other essence.

9. *Big, heavy goods*

CODE: BIG, HEA

When loading a "BIG", the possibility of sticking into another pallet should be considered. When loading an "HEA", one should comply with the restrictions in terms of square and running metres.

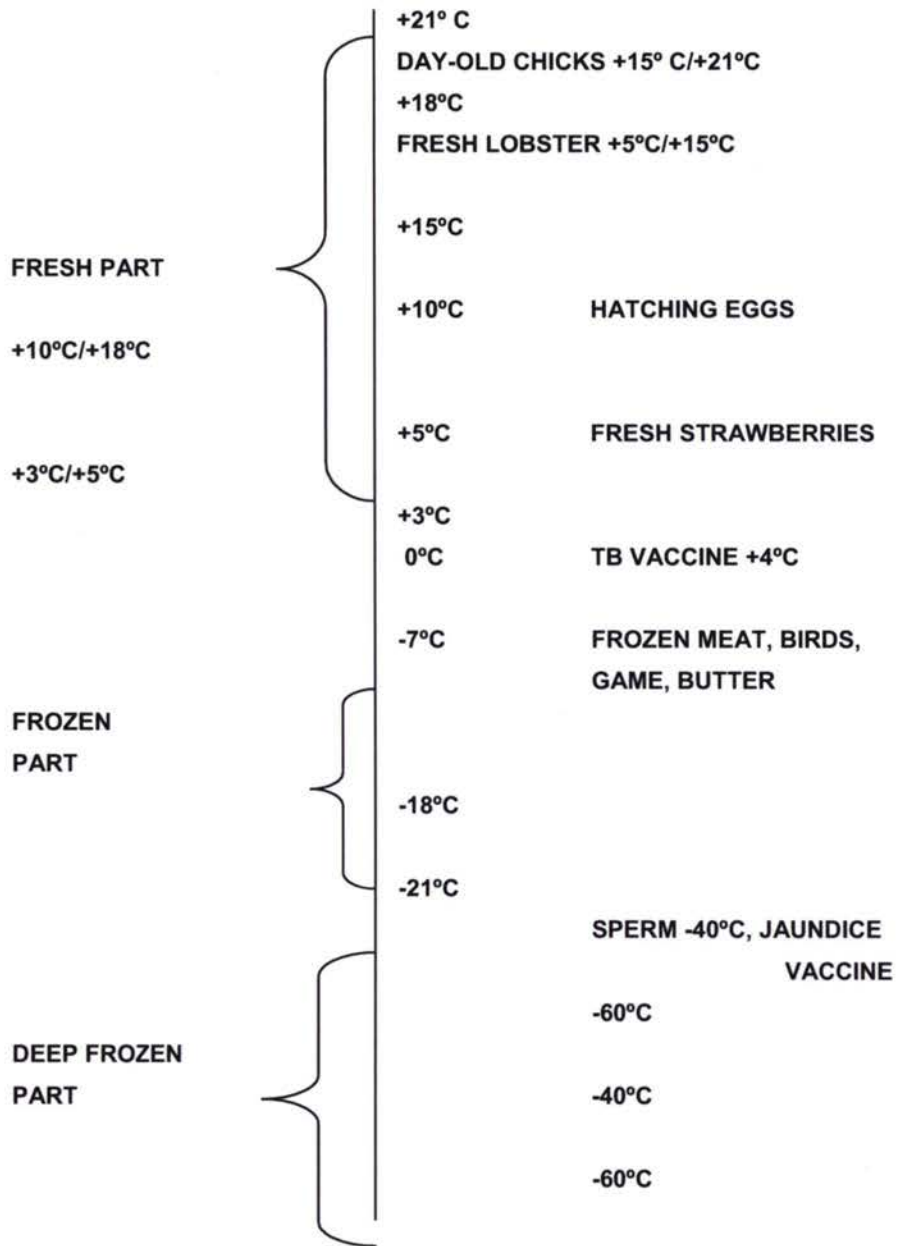


**TEMPERATURE**

**EXAMPLES:**

**+ 18° C OR HIGHER**

**TROPICAL FISH**



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