12

AIR TRANSPORTATION

Air transport assists integration into the worldwide economy and offers vital linkage on a national, regional, and global scale. Aviation assists drive the development of the current world. Air shipment is a main universal employer, supporting a total of 87.7 million jobs globally and offering 11.3 million direct jobs. If aviation were a nation, it would be the 17th biggest economy in the world, supporting 87.7 million jobs and nearly 3.5 trillion dollars in economic impact. As our worldwide economy grows ever more connected, aviation is the feature that brings

LEARNING OUTCOMES

After studying this lesson the learner:

- defines the role of international bodies in regulation of the airline industry;
- assesses the prime concern of IATA;
- classifies the applicability of the rules of the air;
- explains the air traffic services and management;
- identifies international laws related to air transport.

12.1 AIR CARGO & TRANSPORT–INTRODUCTION

Air freight is an extremely valuable form of transport when the goods start moving very fast and timely around the globe. Air cargo is of two types namely a) general and special Air freight permits to transport cargoes quickly by air. Companies who are utilising the air freight services generally might be having two main assumptions. In general the airfreight can be costly in some cases but in other Further a firm can also transport a lot of things

by air, even though it is normally required for FMCG (Fast-Moving Consumer Goods).

Fig. 12.1: **Air Cargo & Transport**

There are two main branches of air freight services.

A. General Cargo: This sort of service is generally less expensive when compared to Special Cargo service. Transit time might be sometimes longer. Goods can be classified as "General Cargo", it does not have any special requirements like temperature control or quick-moving for short shelf life. It also should not be extra-large or have odd sizes (like over length).eg, Clothing (in boxes and palletized), Computers and computer parts (no battery included), books, etc.

B. Special cargo: Commodities that fall under this method of service normally should be handled with care. Some airlines are normally doubtful about accepting certain goods when it comes to special goods service. Some of the cargo sorts that fall below the special cargo class are as follows:

Table 12.1: **Special Air cargo**

S. No.	Special Air cargo
1	Temperature controlled
2	Hazardous materials
3	Heavy weight and over dimensional freight
4	Live animals
5	High value /Fragile items
6	Human remains / Organs /Samples of tissue

- **Temperature Controlled:** This service is for the goods that need being stored under a positive temperature owing to the special nature of the goods. Such as vegetables, fruits, medical kits, etc.
- **Dangerous/Hazardous goods:** Few groups of cargoes they fall under hazardous in nature. Those commodities are flammable, poisonous, radioactive, explosive etc. These cargoes should be packed perfectly and stuffed in a certain space in the airline. For this reason, the rates are anticipated to be higher than the general goods.
- **Live Animals:** The service is generally used to carry pets. Shipping live animals such as cows, horses, dogs, cats, turtles need a properly ventilated space and they should be located in a suitable crate that permits their comfortable stay during the journey. The charges will be based on the chargeable load of the crate including pets.
- **Human Remains/Tissues and Organs:** While shopping the human remains and tissue (or organs) it always needs special handling and packaging. In several cases, it requires temperature control, so the charges related to shipping such goods are very costly in comparison to general goods.

INTEXT QUESTIONS 12.1

1. Air Freight, also referred to as _____ .
2. _____ cargo does not need any special requirements
3. _____ cargoes should be packed perfectly and stuffed in a certain space in the airline.
4. _____ is transported through the same gate path by combining the passenger as well as commercial airlines.

12.2 ROLE AND FUNCTIONS OF IATA

IATA refers as the International Air Transport Association and is the official trade For air carriers, IATA offers a polled resource for scheduling, routing, standardising services and the generation of a international public service for the air segment. For customers, IATA sets the global standard for services and trade practices between member airlines. As an instance, the three-digit airport codes utilised globally are an IATA convention. that one should ensure that their carrier/forwarder is an IATA agent.

IATA is one of the biggest travel and tourism organisations announcing the connection among the airlines all over the globe. The organisation currently has 278 airlines below its

wings which represent 117 nations. The IATA members transport around 83% of the total air traffic. The organisation sets guidelines and corporate policies for the airlines and helps airline activities. IATA headquarters in located in Montreal, Canada, and their executive office is situated in Geneva, Switzerland.

12.2.1 Main functions of IATA

A. Safety: The main favourite of the organisation is to make sure the safety of aeroplanes and the air travellers. IATA has set up a board to generate safety standards for the air borne carriers and experts to determine that the guidelines are stringently observed. These attempts by IATA ushered many developments in terms of air travel security and the quantity of air accidents has been extremely reduced.

B. Security: The airplanes are exposure to terrorism as well as hijack activities. After the increasing amounts of hijack incidents and the September 11 attacks, IATA has taken rigorous standardisation and made necessities to tighten the safety of airlines. The structure works on the basis of passenger segregation and risk evaluation.

C. Environment: Air shipment contributes to the air pollution in a huge way and it consumes tons of fuel. The introduction of IATA teamed up with aircraft producers to set up energy efficiency with less polluting engines. These attempts were helpful in enhancing the fuel capability to 1.5 per year. The carbon emissions created by aircraft engines were decreased and the organisation is now intended for a 50% decrease in carbon emissions by 2050.

D. Services: Apart from strategy making and relevant regulatory services, IATA offers several training and advising services. Here are a few services recommended by IATA to enhance the standards of airlines and air travel :

1. The organisation publicises accreditation for travel intermediaries and travel experts, differentiating them from fake travel agencies.

2. The services related to billing and settlement of IATA operate a 300 billion financial structure to verify airline revenue.

3. The ticket tax box service which is a record for airlines to preserve the tax expenditure.

4. IATA determines the course outline and course formation for several travel and tourism courses. The IATA certification assists students to enrol for organisation approved and legitimate courses. All the foremost airlines and travel firms hire the students who possess IATA certification.

12.2.2 IATA Services:

The services rendered by IATA are as follows:

1. Accreditation – Travel & goods.
2. Intelligence and data.
3. Compliance remedies.
4. Monetary Services.
5. Consulting.
6. Security & Flight execution solutions
7. IATA Codes and
8. Advertising

INTEXT QUESTIONS 12.2

1. IATA sets the global standard for services and trade practices between _____ airlines.
2. IATA headquarters is located in _____.
3. Air shipment contributes to the air _____ in a huge way and it consumes tons of fuel.
4. The IATA members transport around 83% of the total _____.

12.3 DUTIES AND FUNCTIONS OF IATA CARGO AGENT

12.3.1 Cargo and Freight Agent

Cargo and freight intermediaries play a very vital role in the economy by assisting to transport goods or raw materials from one location to the next. They coordinate and assist the incoming and outgoing shipments for shipping industries such as airlines, shipping firms, and rail / road Organisations .

12.3.2 Nature of cargo and freight agent

They help the exporters and importers by receiving or sending the goods through airline, shipping, train, and trailer terminals as well as docks. Further they make sure that shipments are picked up and distributed on time, paperwork is finished, and applicable charges are collected. For worldwide shipments, these agents prepare and confirm customs and tariff forms.

A. Other duties of cargo and freight agents:

1. Determine transporting methods and dispatch from pick-up spots to final destination.
2. Advise their customers on shipping and payment choice.
3. Coordinate shipping and logistics details with respective shipping and freight organizations.
4. Estimation, negotiate, and decide postal charges, shipment prices, and other charges.
5. Announce clients of goods shipments, status en route, and on time delivery.
6. Prepare the Air way bills, invoices, and other necessary shipping documents.
7. Record data such as commodity amount, weight, sizes, time of shipment.
8. Trace lost consignments as essential.

12.3.3 Workplace of an IATA Cargo Agent

IATA agents usually work in warehouses, stockrooms, or transporting and receiving stations. They frequently join hands with clients, logistics firms, and others in the shipping business. They must be capable to courteously and completely offer shipment updates, cost quotes, and other data upon request. Further, they must ensure that the goods enter or are picked up at its delivery on time and must be capable to plan consignments to ensure prompt delivery.

12.3.4 Duties of IATA in a Freight-forwarding company

Eight duties can be related to the duty which an IATA agent performs for a IATA **freight-forwarding company**. The agent utilises all the resources at his transfer to finish the task of moving the commodities.

1. The first duty that the agent has is to explain the routes the goods will move from the pick-up location to the final destination. Determining which methods of transportation to utilise, the storage plan and who will be accountable for stuffing and unloading the consignment.
2. The agent deals with the exporter and the importer to organise and establish the charges for transportation, who is paying the insurance, and how the costing affects the several modes of transportation utilised in the shipment.
3. Once the shipping strategy is set, the agent then must commence to coordinate the

chapter of the strategy to establish the timely and competent execution and follow-through. At this phase, the agent's communication as well as networking ability play a huge part in carrying out all the pieces are in place.

4. There are always charges related to road transport, customs clearance, air freight charges, charges related to documentation and any other extra charges that may be linked to any given consignment. The agent has to have an extensive awareness of the regular and customary fees and also be capable of drawing upon his capacity to predict any unusual charges or taxes that are exclusive to the consignment. This fourth job on the list is frequently downplayed, but a lot of cash can be lost when this job is not done well.

5. These agent must keep both the consignee and exporter informed of the progress of the consignment once it has left the store house. The clients will want to know when the consignment left, whether the cargoes were packed properly and whether they were all in the consignment and what is the anticipated arrival or departure.

INTEXT QUESTIONS 12.3

1. Cargo and _____ play a very vital role in the economy.
2. For worldwide shipments, IATA agents prepare and confirm customs and tariff forms -True / False
3. IATA agents usually work in _____, stockrooms, or transporting and receiving stations.
4. _____ duties can be related to the duty which an IATA agent performs for a IATA freight-forwarding company.

12.4 RESPONSIBILITIES OF FORWARDERS ORGANISATION – FIATA

FIATA is generally called the International Federation of Freight Forwarders Associations and this name is derived from the French acronym of Federation International des Associations de Transitaires ET Assimilés. This organisationis the biggest non-governmental transportation firm in the globe with its headquarters area in Geneva was born in 1926 in Vienna. FIATA is a recognized worldwide organisation representing the curiosity of the freight and logistics business worldwide. At present, it represents a business covering comparatively 40,000 forwarding and logistics organisations, employing around 10 million people in 150 nations.FIATA's membership consists of 109 Association

Members and over 5,500 Individual Members, on the whole representing a trade of 40,000 freight forwarding and logistics organisations worldwide.

12.4.1 Objectives of FIATA

FIATA has five major objectives. They are as follows

1. Put forward to fetch together the international IATA Segments
2. Aims to enhance safe guard and represent the interests of the logistics division. Moreover, they take up the position of industry professionals during conventions of the worldwide transportation and logistics segment.
3. To standardise and value the level of services offered by IATA companies. To this end, they enhance and generate standardised trading circumstances and forwarding IATA documents.
4. Look for to intimately the IATA segment and its clients with the services offered by agent companies. They do this by broadcasting appropriate data and publications.
5. It facilitates vocational education for IATA agents. Further, they also bring many e-trade platforms plus facilities of barcodes and e-data exchange. They also assist their members with accountability insurance issues.

12.4.2 Form of FIATA memberships

FIATA members can be categorised under two forms namely Association Members and Individual Members.

A. Association members: *Association* Membership comprises global representation of the members between the main participants and industry professionals in the shipping and logistics industry. They support member-friendly policies that are intended to enhance their members in their domestic environments. Moreover, these members are to unite a worldwide community of IATA freight forwarders. They offer them a series of resources and platforms to reinforce their voices in the business. Members are needed to comply with the regulations and objectives of FIATA. The Trade Integrity Statement will provide a fair idea about the system that one would be be required to stand for by as a member. Furthermore, the reputation linked with being a member of an extremely sheltered brand like FIATA will permit these agents to accomplish new projects.

B. Group members: They are global companies that symbolise the logistics division of a number of nations. Yet, if all the group members are nationwide federation, they are known as Association members. They can also comprise global FIATA forwarding bodies that state similar interests as that of FIATA. It also comprises groups whose

members are only dynamic in a particular section of the FIATA sector.

C. Yellow Membership: This type is planned for carriers, vendors, shippers and other groups that work surrounded by the FIATA industry. Even lawyers who are specialised in logistics law can turn into a Type Yellow member of FIATA. For this membership one requires to pay a total registration price of 1,185 CHF (Swiss Franc). There is an annual membership fee of 1,000 CHF, a courier fee of 35 CHF and a one time entrance charge of 150 CHF.

D. Blue & Green Membership: This sort of membership is delightfully meant for the independent freight forwarders. Type Blue members are those firms that are in nations with a FIATA Association member. Members in boundaries without FIATA association members are the sort of Green members. The net registration price for Blue and Green Type members is around 335 CHF.In addition, they also have to pay yearly membership charges of 250 CHF, and a one-time entrance charges of 50 CHF and courier charges of 35 CHF.

FIATA's work facilitates the complete industry by representing its members and developing several business solutions. Documents developed by the firms are a valuable cause of information about worldwide policies and laws which normalise the shipping and logistics firms. The group also engages with preparing appraisal for worldwide organisations. An uniformly significant element of FIATA's mission is collaboration with worldwide transport, freight, and world trade organisations. Surrounded by those associations are:

a) The International Chamber of Commerce

b) The International Air Transport Association

c) The International Union of Railways

d) The International Road Transport Union

e) The World Customs Organisation, and

f) The World Trade Organisation.

12.4.3 Transport documents related to FIATA

1. FFI (FIATA Forwarding Instructions)
2. FCR (FIATA Forwarder's Certificate of Receipt)
3. FCT (FIATA Forwarder's Certificate of Transport)
4. FWR (FIATA Warehouse Receipt)

5. SDT (FIATA Shipper's Certification for the Dangerous Goods)

6. SIC (FIATA Shippers Intermodal Weight Certification)

7. FWB (Non-Negotiable FIATA Multimodal Transport Waybill)

8. FBL (Negotiable FIATA Multimodal Transport Bill of Lading)

When Forwarders are using these types of documents it leads to the certainty of increased profit and the security of the shipped goods. Such results are feasible thanks to FIATA for directing their members, both directly and through the given nation's.

INTEXT QUESTIONS 12.4

1. FIATA is generally called _____.

2. The yellow membership is provided to _____.

3. An uniformly significant element of FIATA's mission is collaboration with worldwide transport, freight, and _____ organisations.

4. FIATA _____ members can use the FIATA Logo on their trade cards, organisation brochure, letterheads, automobile, website as well as print materials.

12.5 ACTIVITIES OF AIR CARGO AGENTS ASSOCIATION OF INDIA

The only National Association representing the Air Cargo Industry in India. is the Air Cargo Agents Association of India (ACAAI). It came into force in the year 1970 with merely 16 members, but at present, it has a strength of nearly 203 Active Members, 186 Associate Members, 30 Allied Members (comprising Airlines & GSAs) and 1 Commercial Member. Besides protecting the interests of its members and developing the fellowship among them, it provides expert assistance and guidance not only to its members but also to several Central and State Government sections /authorities connected with the business. Their membership covers mainly a) IATA approved air cargo agents b) India's National Airlines c) Foreign Airlines and d) General sales agents.

A. UPLIFT Features (For exporters): The uplift features for shippers are as follows

- Exporters can enter consignment information and forward it to the forwarder online

- Exporter and Forwarder can upload consignment data from excel or other folder formats on UPLIFT
- e-Docket characteristic facilitate e-transmission of consignment documents and its archival
- Verifications & validations during consignment booking prevent of entry of junk information into the system
- Exporter can obtain status updates via SMS/ e-mails
- UPLIFT facilitates the compliance to e-Freight and Cargo 2000

B. UPLIFT merits :

- Single spot for data entry' thus by saving time, attempts & charges.
- Float numerous RFQ's at a single click to hand over service providers.
- Single window outlook assists the exporter to manage & track position of numerous RFQ's floated
- UPLIFT offers HAWB for validation & authorization to establish fast cargo clearance
- Pre-defined arrangement for analyse & booking requests to contain with exporters internal system.
- Online chat assistance helps the exporter to renegotiate on individual quotes.
- Choose milestones to list routine emails/SMS/status updates.
- Generate & Conduct transport documents online
- A checklist of documents assists to ensure compliance
- Uploading the files such as documents & images
- Exporters can make online disbursement through UPLIFT

C. Uplift Features (for Forwarders) :

- Forwarder can glance RFQ's floated by exporters
- Forwarder can glance airline schedule.
- Forwarder attain approach to profiles of numerous service intermediaries (airlines & other 3PL providers)

- View previous consignment records from the exporter
- Forwarder can recommend RFQs and suitability booking services online
- Forwarder can generate & forward reference online to numerous shippers
- UPLIFT permits quotation revision and receipt, assessment & re-negotiation of quotes
- E-Payments related to Customs Cess, duty and TSP charges
- Online filing of Shipping Bill, Bill of Entry & CGM on ICEGATE
- Cooperate with Customs, custodian, banks and airlines via EDI messages
- Send/r obtain pre-alerts on UPLIFT
- Search related access HS codes
- Updates on customs notices & circulars
- Online transmission and acknowledgment of consignment documents & AWBs
- UPLIFT offers end-to-end consignment visibility
- It offers a single window to all custodians

D. UPLIFT Benefits :

- Forwarders can fetch out online bookings with several airlines
- A single spot of data entry in the complete distribution chain helps save communication charges
- Forwarder can verify flight program and availability of space on UPLIFT
- UPLIFT assist the space for online exhibition for the community to purchase, sell or develop services
- End-to-end consignment visibility (goods, documents & information) improve customer satisfaction
- Forwarder can be grateful for the velocity through online submission of Shipping Bill, Bill of Entry and CGM
- Real-time position updates, alerts and receipts assist the forwarder to offer proactive response to the exporter
- CGM filing via online will result in savings (owing to elimination/ decrease in penalties)

- With UPLIFT, a forwarder can move toward a single portal to link to several custodians for generation of TSP receipts
- UPLIFT interacts with the Forwarder's internal execution system in pre-defined pattern by utilising the flat file, such as csv, xml and xl etc...

E. Uplift Features (for Airlines) :

- Receipts of electronic methods for booking application are distributed to airlines through UPLIFT
- UPLIFT authorise electronic bill of Airway bill data like MAWB/HAWB
- UPLIFT plan customs relation for transfer of information like IGM / EGM / AMS/ EU customs
- Airlines obtain information from custodian / agent
- For sharing carting orders and consignment status a single window to custodians.
- Proper validations offered at the data entry spot during consignment booking and AWB clarification.
- UPLIFT characteristic e-dockets to store information like scanned images of MAWB / HAWB
- UPLIFT assists the airlines to publish charges to agents via a single channel
- Airlines can benefit UPLIFT platform as advertising method to communicate discounts & offers to whole community

F. Uplift Benefits :

- Airlines can now obtain queries for schedules and space availability via online following in decreased attempts in handling enquiries
- Online bill of RFQ, Quotation floating and negotiation assists to improve efficiency.
- E-submitting of AWBs decreases the requirement for double data entry
- Filing of Manifests (FFM) through online, offer of Carting Order and online communication with customs facilitates to decrease errors
- Automation assists to create CAN, CSR / Invoice and distribute personalised alerts and messages to business partners

- Airlines can also prompt trade engagements & initiatives online via e-meetings and web casts
- UPLIFT assists community members share & attain industry greatest practices
- Airlines can also use the UPLIFT for advertisement of on spot offers, discounts and charges
- Uplift presents trade prospects for conduct marketing
- Airline consumer experiences improved customer service
- Airlines identify cost savings from decreased paper-work, decrease communication charges & economic conservation of structures for linkages with customs and custodians
- With UPLIFT, the Airlines stay willing to worldwide initiatives such as e-freight / C2K
- Airlines can obtain status updates on goods movement to and surrounded by airport terminal

G. Uplift Features for Custodians:

- Uplift helps online bill of authorised consignment data
- Proactive milestone vigilant
- Generate Terminal Charges (TSP)
- Create Online TSP bills

H. UPLIFT Benefits:

- Consignment data obtained populated online in the Custodian's system via MAWB
- Online declaration of e-payments done for TSP and Demurrage
- Decreasing overpopulation at the airport inside given infrastructural need.
- Obtaining more forceful alerts for safeguarding service failures
- Enhanced Customer Satisfaction by bringing superior visibility to business
- Improved compliance to plan such as e-freight and goods 2000

INTEXT QUESTIONS 12.5

1. ACAAI came into force in the year _____
2. HAWB stands for _____ .
3. Through _____, exporters can enter consignment information and forward it to the forwarder online.
4. _____ of AWBs decreases the requirement for double data entry

12.6 PURPOSE OF ICAO

Its main function is to maintain a managerial and authority bureaucracy by supporting this diplomatic communication and to research fresh air transport rule and standardisation innovations as intended and endorsed by the governments which are completed by the IVAO Assembly, or by the council of ICAO which the assembly elects. Business and civil society divisions, and other distressed provincial and worldwide organisations, also contribute to the exploration and growth of new standards at ICAO in their capability as 'Invited Organisations'. diplomatically generate new international standards and suggested practices for civil Once governments accomplish diplomatic unity around a fresh standard scope and particulars, it is then implemented by those 193 nations in order to bring international alignment to their national guidelines, assisting to realise secure, safe and sustainable air executions on a reliable global basis. Additionally to these hub diplomatic as well as research potentiality, it also serves as a vital coordination stage in civil aviation via its seven provincial offices.

12.6.1 Strategic Objectives

In its continuing mission to support and facilitate a global air shipment structure that meets the social and economic growth and wider connectivity required of global businesses and passengers, and admitting the clear requirement to forecast and administer the projected doubling of worldwide air shipment accommodation by 2030 without pointless adverse force on system security, effectiveness, convenience, ICAO has created five widespread Strategic Objectives:

1. **Safety:** To develop global civil aviation safety, this objective is focused mostly on the State's regulation oversight potential. The Global Aviation Safety Plan (GASP) spotlights the main activities for the triennium.
2. **Air Navigation Capability and Effectiveness:** Develop the capacity and enhance the efficiency of the worldwide civil aviation system. Even though functionally and

organizationally inter-reliant with Safety, this objective is to spotlight the development of air navigation and airport infrastructure and developing innovative procedures to optimize aviation structure performance. The Global Air Navigation Capability and Effectiveness Plan (Global Plan) outlines the main activities for the triennium.

3. **Security & Facilitation:** In order to increase global civil aviation security as well as facilitation, it reflects the requirement for ICAO leadership in aviation protection, facilitation and associated border security matters.

4. **Economic development of Air shipment:** In order to boost the growth of a sound and economically pertinent civil aviation system it reflects the requirement for ICAO's leadership in maintaining the air shipment framework intended on economic guidelines and supporting activities.

5. **Environmental Protection:** In order to reduce the adverse ecological effects of civil aviation activities it boosts ICAO's leadership in all aviation- connected ecological activities and is reliable with the ICAO and UN structure environmental defence policies and practices.

12.6.2 Purpose of the ICAO

The ICAO generates guidelines for aviation safety, security, effectiveness and regularity and ecological protection. The organisation also facilitates the operating practices and policies covering the technical area of aviation. This compilation ensures a smooth air shipment and territory crossing process and ensures to:

a. create fair opportunity to execute international airlines

b. Enhance fight safety and

c. Decrease expenses and penalties.

The intend and objectives of the ICAO is to create principles and system for worldwide air navigation and to develop planning and growth of global air transport so that it can:

- Ensure the safe and regulated development of global civil aviation
- Enhance the art of aircraft innovation and application for peaceful intentions
- Enhance the growth of runways, airports and air navigation amenities for worldwide civil aviation
- Meeting the requirements of the nations of the globe for safe, orderly, effectiveness and reasonable air transportation

- Protect economic waste created by unreasonable competition
- Ensure that the agreement rights of the Union are completely respected and that every member State has fair prospect to execute international flights;
- Avoid difference among union contractors;
- Enhance flight safety in global air navigation; and
- Enhance general development of all features of worldwide civil aeronautics.

12.6.3 Functions of ICAO

The ICAO consists of two major functions as mentioned below.

A. Describe the protocols for air accident investigation

The ICAO describes protocols that are utilised by signatory agencies of the Convention on global civil aviation in their relevant nations during an investigation of air accidents.

B. Monitor standards and practices for worldwide civil aviation

The ICAO monitors the standards and practices of air routing and its infrastructure. They ensure flight scrutiny is conducted as per the practices and make sure that qualities are met. Further it is also accountable for the avoidance of unlawful interference, and assists territory-crossing processes for global civil aviation.

INTEXT QUESTIONS 12.6

1. ICAO was founded in the year _____.
2. The intent and objectives of the ICAO is to _____and system for worldwide air navigation.
3. The ICAO monitors the standards and practices of _____ and its infrastructure.
4. The ICAO generates guidelines for aviation safety, security, effectiveness and regularity and _____ protection.

12.7 TYPES OF AIRCRAFT

The aircrafts are generally divided into Passenger and Cargo which are as follows

A. Passenger Aircraft (PAX): This type of aircraft is generally used as commercial

and regularly carries passengers with a space in the aeroplane for goods as well. However, the goods division in an aircraft has to be organised for stuffing; for instance, the first priority arrives to a) diplomatic mail b) passengers baggage c) courier consignment and d) general cargo.

a. **Cargo Only Aircraft (CAO):** This form is merely to carry cargo and passengers on board. Hence, it is more convenient than PAX when it arrives to accept goods. But it is imperative to bear in mind that CAO service is more costly than PAX even when transporting general cargo.In some nations, like the USA, there is a co-operation pointing to "known" and "unknown" exporters related to their history of doing business. If the exporter is "Unknown", air consignment is not accepted on PAX no matter what the particulars of the cargo are.

b. **Aircraft**: Any vehicle which is produced and created to fly in the air is referred to as an aircraft. Whereas the aeroplane is the most recognized, intimate, and appropriate form of aircraft. We are aware, other vehicles too that fly via the air also arrive in this kind. All of these aircrafts have propellers with supported wings or machinery to move through the air; though, they might differ according to their dimensions, types, usage, and more.

12.7.1 Co ordinations of Aircraft

Before we enter into knowing various types of aircrafts, let us understand how these aircrafts are categorised. In most ordinary terms, there are two kinds of coordinations for aircrafts 1) lighter than air aircrafts, also referred to as aerostats, and 2) is further than air aircrafts, referred to as aerodynes.

1. Aerostats (Lighter than Air): Aerostats are very light in weight and these kinds regularly utilise buoyancy like vessels, which assist them float in the air. In order to operate the low-frequency gases are used, namely hydrogen, helium, or hot air balloons to fill in the aeroplane. This low-frequency gas is lighter than air, and hence the name. The most widespread kinds of aerostats known to us are a) hot air balloons and b) sky lanterns.

2. Aerodynes (Heavier Than Air): On the other hand, this aircraft is heavier than aerodynes and is much higher in weight and dimension. They push the gas towards downwards; which reaction assists to generate aircraft higher. Since these are forceful during journeys in the air, they are referred to as aerodynes. a) Fixed-wing co-ordination is similar to planes. In this segment of fixed-wing aeroplanes, the whole mechanism is dependent upon forward velocity to generate airflow all over the wings. b) The rotorcraft, which utilises the spinning rotors that are similar to wings. The helicopter is the most frequently referred aircraft in connection to this coordination .

12.7.2 Types of Aircrafts in the World

The different forms of aircrafts are as follows:

1. **Amphibious**: This aircraft is also referred to as amphibian which is a multipurpose aircraft which can be operated in both land and water. In this, the engine is located in front, or else above the wing, that is most frequently seen in floatplanes. The latest and other amphibious aeroplanes, the engine and propeller, are located above the wings. The dimensions of amphibians vary as per the purpose namely military, leisure and civil aeroplanes.

2. **Helicopters:** This is also referred to as a chopper, which belongs to rotorcraft. The horizontally spinning rotors would assist and aid to lift and thrust the helicopter and it has the advantage of taking the direction vertically or horizontally, and even fly both backward and move forward or laterally. The engine is purely based on the purpose, dimension, and execution of the chopper. At present, the helicopter is mostly used for military purposes, goods, construction, rescue, tourism, aerial inspection, and the government.

3. **Multi-Engine Piston:** The multi-engine piston aircraft consists of one single-engine, which hasa second power authority, and is greatly supportive during the failure of another engine. Owing to this manifold power and engine effectiveness, the aircraft excellence, capability, speed, and climb rate is much superior to the common air craft's.

4. **Biplanes:**

***Fig. 12.4:*Biplanes**

This aircraft arrives under the division of fixed-wing aircraft and two wings arrive

one above the other on both the sides. This form of plane is the first aircraft innovated with fixed-wing planes. Even Though it is lower weight but has an excellent stiffness and capability. Their engines are reciprocating in nature which is used to carry two adults and are spotted and utilised for army and military purposes.

5. **Balloons:** These type aircraft are standard in nature and are typically spotted during tourist activities. It arrives under a kind of aircraft that floats in the sky and is very different from other aircraft types. The balloon's top is referred to as an envelope, and the bottom division is surrounded with a basket where citizens can sit. The most widespread ones are hot air balloons.

6. **Gliders:** These are fixed-wing aircraft which are utilised via air reaction against lifting location and mostly do not utilise any engine. Even though small engines might be utilised as needed, they are competent for self-take without the usage of engines. During take-off or landing, a wheeled undercarriage would assist to perform this activity. During past; they were used for military and war purposes but at present nowadays are used in tourist activities such as entertainment or leisure. They can carry a maximum of two people and the most popular gliders are hand and par gliders.

7. **Gyroplanes:** They are popularly known as autogiro or gyrocopter, and it is a rotorcraft aircraft segment that utilises rotor machines to lift. They are the same as helicopters in appearance, even though a bit narrow, and surrounded by an engine-driven propeller. The air stream assists the planes to lift upwards, and the rotor self-propels as per the path air flows via it. They were widely utilized for military and war during the 20th century and at present they are used in Olympics and department of police in some states.

8. **Parachutes:** They are slow going aircraft which can accommodate two, that assists to move through, generating drag to land. They are lightweight but stable and fitted with fabric namely nylon or silk. The shapes are generally round, dome, or inverted dome and spotted during leisure progress and entertainment. They are also used by state during exceptions to ice locations such as polar ends.

9. **Single Engine Piston Aircraft**: This aircraft has a single engine and is used for shorter distance works and not utilised for heavy works. They were able to access the smaller runways, occupy less space, with lesser climb and speed. These can carry four to six people based on their size.

10. **Tricycle Gear Aircraft:** This form of plane that has tricycle fashion with attached landing gear. It has a nose wheel in the front as well as two more towards the main

wheels. They are lightweight in nature and have enhanced clearness of the ground, which are very easy to take off and land. It has less drag which permits the application of a full brake and is utilised for lighter and rapid uses, which provides the advantages of simple runs.

11. **Business Jets:** It is referred to as private jet aircraft are luxurious in nature which are designed to transport small groups, even individuals. While they are expensive owing to their design, plush form, with sophisticated looks. They are mainly used by diverse classes of people from government executives to armed forces for certain special executions to organisations and private ownership. Whereas the speed, engine, and other production are similar to aeroplanes, the dimension differs from lightweight with small jets to mid-sized ones to long trade jets. The heavy and long jets can carry 16 to 18 people, while the mid-size (based on the capacity) can carry up to 12 or 10 people. The smaller forms of business aircraft can accommodate four to six individuals.

12. **Taildraggers**: These are referred to as the tail-wheel form of gear draggers, comprising two main wheels at the forward size and a small-sized wheel to skid adjacent the tail location. These are the conservative aircraft variety which utilises such gear draggers as an alternative of the current tricycle propeller aircraft. These are the greatly lighter dimension and weight aircraft and can even be executed in skis. Yet, they have extremely poor visibility on the ground and are complicated during heavy wind circumstances.

13. **Tilt rotors**: These are powered rotors for propulsion which helps to create lift also referred as proprietors, which are added to rotate the shafts towards a fixed-wing. These utilise transverse rotor design and unite the vertical lift capacity of a helicopter. It is similar to the chopper, which assists to lift this aircraft. Though, the propulsion is much more effective and can evade retreating blade stall, frequently seen in choppers. The velocity and series are heavier and higher than a standard helicopter and approximately near a fixed wing aeroplane. The altitude ability of tilt rotors is superior to helicopters.

14. **Light-Sport Aircraft**: This is also known as LSA, which varies from nation to nation. Though, they are into the new type of small and extremely lightweight aircraft which is easy to fly. They are a bit heavier than ultra light aeroplanes, and their sophisticated looks are grand. These are generally two-seater versions and are much more reasonable too.

15. **Turboprops**: It has a gas turbine engine linked to the gears to turn the propeller to shift them through and roughly the air. They burn greatly lesser fuels and have

lesser executing charges too. They are larger than piston air planes and can lift more passengers. They also fly high and can move to an altitude of 35000 feet. Yet, they are slower in pace when compared to jet planes. Their size differs according to the requirement and can fit into a small set of groups or up to eight or ten at maximum.

16. **Floatplanes:** These are similar seaplanes, which float on water via the floats raised under the fuselage. These mounts are included in spite of the undercarriage, where wheels are located in other planes. These do not possess landing gear, which makes it possible to land, in which it becomes alike to amphibious aircraft. They were heavily utilized during the world war period for military executions and nowadays it is witnessed more of an enjoyment in several countries.

17. **Fighter Jets** : These are also referred to as fighter aircraft, which are military exacting fixed-wing aircraft. They are innovated in order to utilize for combating air towards air fights beside other aircraft. They have extremely high speed, produced for use against air attacks only. Yet, few fighters have a second capability to utilize for ground attacks, too, in which they are referred as fighter bombers. There are numerous kinds in the fighters: such as a) light fighter b) heavy fighter, c) interceptor d) night fighter e) all-weather fighter, and more. With the assistance of sophisticated technology and breakthroughs, at present fighters have several other capabilities and innovations namely

    a) data transmissions

    b) sensors

    c) secure cockpit

    d) high bandwidth, and more.

18. **Cargo planes:** These are referred to as freight aircraft, airlifter, or cargo jets. These are surrounded with fixed-wing co-ordination of aeroplanes only for carriage of goods. These planes are particularly designed only for lifting carriages and do not have facilities for fitting groups. They have extensive doors and amenities to safeguard and office shipment. Unlike common passenger jets, the elevated wings presence permits to preserve and make the goods sit near the ground. The number of wheels is also additional in cargo jets. These cargo aeroplanes can be utilised both for civil as well as military purposes.

INTEXT QUESTIONS 12.7

1. _____are referred as freight aircraft, airlifter, or cargo jets
2. _____ has a gas turbine engines linked to the gears to turn the propeller to shift them through and roughly.
3. _____ are popularly known as autogiro or gyrocopter, and it is a rotorcraft aircraft segment that utilises rotor machines to lift.
4. Helicopters are also referred to as a chopper, which belong to _____.

12.8 MERITS AND DEMERITS OF AIR TRANSPORT (CARGO)

Air freight shipment is the quickest mode of transporting cargoes in the national as well as global markets. The merits and demerits that air freight shipping services are as follows:

A. Merits of Air freight transportation

a. **High Speed:** Air freight is appropriate for transporting cargoes which require to be distributed at long distances in a short time. Given the pace at which carriage of goods can be achieved, air freight cannot be altered by any other form of transport in times of urgent needs.

b. **Permits to transport of perishable cargoes:** Air shipment is the perfect mode for shipping perishable cargoes which do not have a long shelf life.

c. **No infrastructure investment needed:** Air cargo does not need any capital related investments in construction of air ports or like ships or tracks like railways.

d. **Simple Access:** In spite of of landscape obstructions air shipment is accessible in all locations of the world which is not within simple to reach of other transportation forms.

e. **Decrease of damage:** Shipping through air refers that there is faster delivery less handling of commodities during transit. Air freight transportation is by far extremely safe and has a less degree of risk of damage.

f. **Worldwide flexibility for Shipping:** After the invention of air was introduced, several spots are opened to dispatch. Trust on marine vehicles as well as land Trans portion via major shipment networks. Smaller nations of the world are frequently overlooked. Opening numerous doors to manifold parts of the world refers to enormous reach and more customers served.

g. **Reliability of arrival and departure :** With the assistance of airline services, it is simple to track the cargo and follow its promised distributed time.

h. **This is beneficial for agriculture:** Air shipment is appropriate for injecting pests and insects that harm crops.

i. **Trustworthy Air traffic services:** When a firm can select a qualified, experienced and representative carrier who holds IATA and offer reasonable prices. With their experience they were able to provide reliable air traffic services.

B. Demerits of Air freight shipping

a. **Extremely Costly:** Air shipment is regarded as the costliest form of shipping. Air freight charges are so high that it is not realistic for low-value goods..

b. **High Risk:** Air transport is perhaps the riskiest form of shipping since a minor glitch can create a substantial loss.

c. **Less carrying capacity:** The cargo capacities of aeroplane are limited and frequently too small to fulfil the needs of most worldwide shippers. Aeroplanes are not suitable for moving bulky and voluminous cargoes.

d. **Unreliable:** Air shipment is severely impacted by unfavourable weather circumstances thus making it unsure and unpredictable. Often aeroplanes are cancelled owing to fog, heavy rainfall and snow.

INTEXT QUESTIONS 12.8

1. Air freight shipment is the _____mode of transporting cargoes
2. Air shipment is the perfect mode for shipping _____cargoes.
3. Air shipment is regarded as the _____ form of shipping
4. Air shipment is severely impacted by unfavourable _____ conditions thus making it unsure and unpredictable.

WHAT YOU HAVE LEARNT

- Air Freight, also referred to as air cargo and it is considered as one of the modes of transport which is used to transport consignment speedily by air. Airfreight is an extremely valuable form of transport when the goods start moving very fast and timely around the globe.

- IATA refers as the International Air Transport Association and is the official trade organisation for the globe's airlines (by admitting more than 85 participating countries). For air carriers, IATA offers a polled resource for scheduling, routing, standardising services and the generation of a international public service for the air segment.
- Cargo and freight intermediaries play a very vital role in the economy by assisting to transport goods or raw materials from one location to the next. They coordinate and assist the incoming and outgoing shipments for shipping industries such as airlines, shipping firms, and rail / road Organisations.
- FIATA is generally called the International Federation of Freight Forwarders Associations and this name has arrived in the form of the French acronym of Federation International des Associations de Transitaires ET Assimilés. This organisation is the biggest non-governmental transportation firm in the globe with its headquarters area in Geneva was born in 1926 in Vienna.
- ICAO which is referred as International Civil Aviation Organization was founded in the year1947, April.4.Its headquarters are located in Montreal, Canada and it is a specialised agency of the United Nations. It is funded and headed by 193 national governments to promote their diplomacy and collaboration in air shipment as signatory states to the Chicago Convention (1944).
- The aircrafts are generally divided into Passenger and Cargo which are Passenger Aircraft (PAX and Cargo Only Aircraft (CAO)

KEY TERMS

Air	Freight Shipment	Cargo	Goods IATA
ICAO	FIATA Consolidator	Transport	Carrier Perishable

TERMINAL EXERCISE

1. Define Air freight.

2. Explain Special cargo.

3. What is the full form of IATA?

4. Define IATA cargo agent.

5. What is the full form of FIATA?

6. State the services rendered by IATA.

7. List out the benefits of FIATA's blue type membership.

8. Sketch the main objectives of FIATA.

9. Highlight the functions of ICAO.

10. Bring out the two main branches of air freight services.

11. Spotlight the duties of IATA in a Freight-forwarding company.

12. Mention the activities of the Air Cargo Agents Association of India.

13. Highlight the purpose of ICAO.

14. List out various types of aircrafts in the world.

15. Point out the merits of air freight transportation.

ANSWER TO INTEXT QUESTIONS

12.1

1. Air cargo
2. General
3. Dangerous
4. Air cargo

12.2

1. Member

2. Canada
3. Pollution
4. Air traffic

12.3

1. Freight agent
2. True
3. Warehouses
4. Eight

12.4

1. International Federation of Freight Forwarders Associations
2. Shipper
3. World trade
4. Blue type

12.5

1. 1970
2. House airway bill
3. UPLIFT
4. E-submitting

12.6

1. 1947
2. Create principles
3. Air routing
4. Ecological

12.7

1. Cargo planes
2. Turboprops
3. Gyroplanes
4. Rotorcrafts

12.8

1. Quickest
2. Perishable
3. Costliest
4. Weather

DO AND LEARN

Learners can undertake their activity work in the areas of different Air transportation / air cargo warehouse / air cargo distribution organisations