
UNIT 14 MODERN TRENDS IN AIR TRANSPORT

Structure

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14.0 OBJECTIVES

After studying this unit, you would be able to:

- elucidate the role of air transport in modern tourism,
- describe the way information technology enhances tourist experience,
- identify the trends in air travel product distribution,
- explain the role of new business models in air transport industry,
- describe the expansion and developments taking place in airport sector; and
- discuss about the trends in air travel industry.

14.1 INTRODUCTION

Barring the devastating effect of COVID-19 in recent years, air transport sector had been growing remarkably over the last couple of decades. Though there were some hindrances in between, like what happened during Sept' 11 (9/11) terrorist attacks in the US; air transport sector has always shown extreme resilience to bounce back into the growth trajectory. According to ICAO's preliminary compilation of Annual Global Air Transport Statistics for 2019, the total number of passengers carried by scheduled airline rose to 4.5 billion in 2019, which is 3.6 per cent higher than the 2018.

India too has shown exceptional growth rate in air transport over the last several years. Both international and domestic air transport sectors were growing at a remarkable rate prior to COVID - 19. Indian domestic passenger transportation has grown

exponentially. International Air Transport Association (IATA) reported that, in 2017, India's domestic market posted the fastest domestic growth rate for the fourth consecutive year, with an 18.6% annual demand increase.

ICAO (forecasts on scheduled passenger and freight traffic) predicts that the global passenger traffic will grow at 4.2 per cent annually from 2018 to 2038. On the other hand, the freight traffic is expected to grow at 3.5 per cent annually from 2018 to 2038. Asia and the Middle East region, along with some regions in Europe, are estimated to have fast growth rate in the years to come as well.

In this unit we will discuss some of factors that have helped increase the role of air transportation in Tourism. The face of Air Transportation has changed rapidly in the last decade or so, as now air transportation is easier, faster and also a pleasurable experience. This unit discusses the use of AI(Artificial Intelligence), Information Technology, as well as other trends that have changed the way we looked at air transportation, forever.

14.2 INCREASING ROLE OF AIR TRANSPORT IN TOURISM

Air transport has been recording consistent growth in term of tourism transportation since the end of the Second World War. As of now, air transport has the largest share in the transportation that is being used by the international travellers for reaching the destinations. According to the United Nations World Tourism Organization (UNWTO), the share of air travel has increased from 46% in 2000 to 58% in 2018, while land transport has decreased from 49% to 39% in the same period. On the other hand, the share of rail and water-based transportation together is 6 percentages only. Once upon a time, water and rail transport were very significant in international travel. While now Air transport has transformed into a common transport form, which is affordable to more sections of the society.

Tourism and air transport share a symbiotic relationship. Both have grown hand in hand and have become part and parcel of the modern society. Both complemented each other in their evolution. While transport facilitated the growth of tourism, the evolution of tourism keeps on adding demand into the transport sector. Development and progress in Tourism led to an expansion in the transport infrastructure, accessibility to destination, at every stage of its evolution. Destinations had to expand the transport infrastructure to meet the surge in tourism and tourist demands. Some destinations expanded their airports' areas to meet the increasing demand, while other destinations constructed new airports. For instance, with the growth of tourism and trade in Dubai, UAE has gone for a new international airport called Dubai World Central (Al Maktoum International Airport). It already had a world class airport but the growth in tourism and trade projects compelled Dubai to have a new airport as a hub of trade and tourism.

Moreover, tourism has brought about many changes in the air transport services. For instances, airports now go for more amenities and services, primarily targeting the leisure and business travellers. The quality of services at airports and by the airlines does matter for as it can lead to a better travel experience for the tourists. Whether it is spa or lounge, food court or fine dine restaurant, kid zone or shopping arena; airports

now offer enough services to keep a traveler engaged and happy while waiting for his/her flight. As it goes, airports and airlines are constantly increasing their range of services offered.

On the other hand, tourism is a direct beneficiary of advancements in transportation. Long haul tourism is a direct benefit of air transport advancements that took place in the 1960s and 1970s like the use of wide body aircrafts for commercial air transportation. The expansion, growth, quality improvement and improvement of the airline supply chain certainly contribute in the growth of tourism.

Another spurt in tourism activity was the direct result of the flourishing of Low-Cost Carriers (LCCs) which popularised short haul city tourism among different income groups. We can say that whenever the distance between origin and destination increases, the relevance of air transport also increases. As air transport is getting more affordable, more sections of the society are travelling by air to the destinations and tempts more people to be part of tourism. LCCs help on augmenting the travel propensity, so that people in the tourism market can afford air travel. Favorable policies and regulations related to air transport always help tourism to grow. The liberal approach to bilateral agreements and the multifaceted agreements in the air transport industry positively support tourism. Many countries now a day engage in Open Sky policies and that enhances the air accessibility greatly. Many of the airlines offer all-inclusive package tours, which directly promote tourism in larger scale.

Analyzing the evolution of tourism in the last fifty years or so, clearly reveals the role played by air transportation. The travel becomes safer and comfortable. Moreover, the safety parameters have advanced greatly over the years. Travellers have better experience through air transport. Overall tourist experience gets elevated by an enjoyable flight from the origin to the destination and return. Air transport infrastructure has expanded greatly over the last few decades and air travel has become more convenient, affordable and attractive. Thus, the role of air transport in tourism is getting increased and the trend is poised to continue further.

14.3 INFORMATION TECHNOLOGY TO ENHANCE AIR TRAVEL EXPERIENCE

As stated earlier, air transport has a significant role in making the journey between the origin and destination, and the return enjoyable. Air transport sector is always in the forefront of technology adoption as you have read in the previous units on IATA, OAG and TIM. Air transport sector has utilized effectively advancements in the information technology for its operational as well as managerial functions. These technological integration in the Air transport sector has in one or the other way, enhanced the travel experience of tourists.

Airlines are pioneers in integrating information and communication technology for their commercial operations. As you are aware, the first computer reservation system (CRS) called SABRE was initiated in the 1960s, and now CRS and GDS are integral part of the aviation industry. Once upon a time, air ticket booking was possible only through a travel agent or an airline office. Now the passengers can do it from the comfort of his/her home. Airline Apps on smartphones can provide updates on the flights and changes in the schedules in time. Interactive communication is possible by the use of latest communication technologies. Now, even check – in can be completed and boarding pass be printed, before reaching the airport.

Lately, airline sector is using Artificial Intelligence (AI) to deliver a personalized traveling experience to the passengers. Digital technologies, Biometrics, machine learning, robotics and block chain technologies are also being used in order to make the passengers handling easier and hassle free. Some of the latest trends and use of technology are listed below:

1. Airline pricing has been greatly digitized. Airlines follow dynamic pricing strategy with the support of revenue management systems which enable them to manage the unpredictability of demand in airline sector.
2. Airlines and travel agents are also offering mobile booking options. Passengers can book ticket sitting in his/her bed room, at any point of time since Airline Apps can be easily downloaded on the smart phones.
3. The payment of ticket prices have become easy by using online payment mechanisms.
4. Self-service check-in kiosks and the web check-in facilities are also active in almost all the larger airports of the country and globally.
5. Artificial Intelligence(AI) in passenger identification is a trend in International Air Transportation. Biometric technologies such as facial recognition, fingerprint authentication, and retinal scanning are being integrated with personal verifications mainly for border control, airport check-ins, boarding and migration formalities.
6. Airports are now completely automated and it enables faster passenger handling and cargo and baggage management.
7. Airlines and ground handlers use Automated Departure Control Systems (DCS), which support the critical operations at airports such as automated check-in, boarding, and load planning.
8. Inflight internet connectivity is also being introduced by airlines.
9. The inflight entertainment system has also seen great advancement due to the use of information and communication technology. Now the inflight entertainment can also be downloaded on the phone using a link for use during the flight.
10. The journey is more comfortable and safer by the use of latest technologies.
11. The baggage management systems at the airport can provide real time information and perform baggage reconciliation effectively. This is discussed in the next sub section.
12. IT-based cargo handling systems help airlines to process cargo handling information more efficiently.
13. With unbundled pricing strategy, airline websites have now become a shopping point that can offer a better airline seat booking experience.
14. Airport ownership is facing a shift in ownership from public to public-private partnership. This enables the countries to have increased investment on transport infrastructure.

15. Airports are now being transformed into all-inclusive hubs with ample scope for rest, relaxation, meeting, refreshments, shopping, etc.
16. Airports are also trying to reduce noise pollution as well as implement high standards to limit air pollution.
17. Airports are generating energy through renewable sources and improving energy management solutions. More eco-friendly practices are being integrated in the operations and management of airport and its premises. Aircraft fuel efficiency is a prime concern now and advanced aircrafts used are much more fuel efficient.
18. Consolidation is a trend in the realm of international air transportation. Mergers and acquisitions take place quite often in airline industry. Airline form groups to cooperate with each other, and such alliances are beneficial for both customers as well as airlines. Passengers can enjoy a range of benefits, such as lower prices, better access to tickets around the world, and mileage wards in a single account from different carriers.

14.3.1 Baggage Management System

Technology has made the luggage safer. Baggage handling process is being enhanced with the use of latest tools with data science and machine learning application which can provide better passenger experience. Advanced levels of baggage tracking systems can now detect and match mishandled baggage easily. Baggage Tracking is part of the IATA End to End baggage program that aims to improve efficiencies in baggage handling operations, in order to meet the changing demands of passengers as the air transport industry is set to double in size by 2035.

Technology, such as tracking apps and RFID tags, make all the difference when it comes to ensuring that passengers aren't left disconsolate around the baggage carousel. Several technologies now allow for accurate baggage tracking from the drop-off point to the passenger's recovery at their destination. Among these various solutions, we can note:

- Identification with laser barcode readers
- Identification with Optical Character Recognition (OCR)
- Identification with camera technology
- Identification with Radio Frequency Identification (RFID)

The popular worldwide computerized baggage tracing system as they have evolved are:

1. **BAGTRAC:** Primary baggage tracing system was jointly developed by IATA/SITA. The purpose was to expedite, economize and improve the effectiveness of Mishandled baggage. Today it also provides baggage updates to passengers' mobile devices.
2. **BAHAMAS:** Baggage Handling and Management System: This too was developed by IATA / SITA to compliment BAGTRAC and to provide full Baggage Management system. It interfaces with other baggage tracing systems and generates baggage tracing messages automatically.

3. **ACTS (Airlines Computer Tracing System):** The access to this system is through a direct communication link with the BAHAMAS system. This system is normally used after 5 days and/ or 120 hours. The ACTS message identifiers are SND (Still Need), SHL (Still Hold)
4. **WORLD TRACER:** Co-sponsored by IATA/SITA, it was introduced to assist in the rapid recovery of mis-routed passenger baggage, allowing information exchange within a given airline as well as between airlines worldwide.
5. **BRS (Baggage Reconciliation Systems):** Airlines also make use of baggage reconciliation systems (BRS) as a means of both reinforcing the baggage process and tracking each single piece of luggage. Etihad Airways is one such player to have used BRS to its advantage, having reported a 33% year-on year improvement in mishandled baggage in 2018 by deploying the technology at its Abu Dhabi hub.

14.4 ELECTRONIC DISTRIBUTION

Airlines are the pioneers in distributing products through internet. Through the computerized reservations systems, airlines started selling tickets directly as well as through travel agents. By the new millennium, airlines under the leadership of International Air Transport Association (IATA), started to distribute tickets directly to consumer so as to eliminate the commission paid to the travel agents. This trend caused the following two situations in the realm of travel product distribution:

1. Disintermediation

This represents the tendency of avoiding the intermediaries from the system of distribution of the products. Cutting down the middlemen is the prime target. Airlines started promoting the sale of tickets through their own websites, primarily. The trend of eliminating the intermediaries from product distribution is known as *Disintermediation*. The rise of Internet as a powerful medium for product distribution and transaction is the prime reason behind the trend of disintermediation.

2. Reintermediation

As the tendency of product distribution through internet increased, different types of internet-based intermediaries, called eMediaries, emerged. Soon, they became the prime distribution channel for airlines as well. While disintermediation avoids middlemen from the supply chain, reintermediation adds new intermediaries to the supply chain. Travel sector has a number of online intermediaries and now, they are very powerful in the air transport market. The following are the major distribution channels of airlines that use latest information and communication technology tools for the distribution of airline products.

- i. **Online Travel Agent (OTA):** This is an internet-based marketplace that allows travellers to research and book travel products and services, including hotels, flights, cars, tours, cruises, etc., directly with travel and tourism industries. Every transaction is done through online modes and customers have now increased choices to select the most suitable products and offers through online travel agents.

ii. **Mobile Travel Agent (MTA):** Mobile platforms are used for product distribution and transactions. Mobile based travel distribution applications are now available and that make the purchase of travel products easy for the consumers. Online travel agents also have mobile travel application and there are a number of mobile-only travel agencies in the market. Hotel Tonight, Blink, Just Book and Hot Hotels/Really Late Booking are some examples of mobile only travel agents.

iii. **Global Distribution System (GDS):** GDSs are advanced versions of former airline computer reservation systems. GDS is basically a reservation mechanism that can be used for making an air, hotel, car or other travel service booking. It provides flight schedules of different airlines and the available options for booking airline seats and other services. You have read about GDS, its evolution and impact on aviation industry in Unit 11.

iv. **New Distribution Capability (NDC)**

This new distribution mechanism is developed by International Air Transport Association (IATA). It is claimed as an advanced distribution system that enables both the travel agents as well as consumers to choose the right product offers of the industries. You have read about it in Unit 11.

v. **Other online agents**

There are different types of intermediaries seen in the travel sector that function online. Meta search engine is one such example. It primarily helps in searching for the right options suiting the needs of the consumer and helps the consumer to make reservations. Online Travel aggregators are also there. Opaque sites, which help enable the unsold/distressed travel offers easy for selling, are also there in the market.

Check Your Progress-1

1. Explain the new roles of air transport in the progress of tourism.
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2. Describe the role of information and communication technology in enhancing traveler experience.
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3. Distinguish between disintermediation and reintermediation.
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14.5 NEW AIRLINE BUSINESS MODELS GAINING STRENGTH

Airlines, at one point of time, were having only one type of business model. Every airline followed the same pattern of business practices. Airlines were controlled by the governments and air transport was completely regulated. All airlines were owned by the government or its agencies but over a period of time that practice got changed. Governments started to liberalise the air transport sector, starting with USA. The *Airline Deregulation Act*, a United States federal law that *deregulated the airline industry* in the United States, removing federal control over airline industry was in 1978. From that time onwards, private airlines started playing a key role in the air transport sector. This trend continued, and soon Europe also started privatization. India started privatization by 1990s, and till then, Air India (international services), Indian Airlines (domestic services) and Pawan Hans (helicopter services) under Govt. of India were the only available air transportation in India.

As privatization began, new business models in air transport started gaining prominence. Low-Cost Carrier (LCC) business model is one of these new models which got established and is gaining strength. The growth of LCCs has gone hand-in-hand with market liberalization, as LCC keeps on innovating and strategizing to economize their operations. Some of the features of LCC are:

- i. LCCs are also called ‘No-Frills’ airlines
- ii. The prime attraction of Low-Cost Carriers is the cost factor. They offer air transportation at the cheaper price than other Full-Service Carriers (FSCs).
- iii. Dynamic pricing strategy is used by LCCs for making profit.
- iv. It is not just the low price that attracts, they offer simple model of air transportation which is adequate for a journey, that specially a short haul journey.
- v. They operate point-to-point services and usually on short haul routes.
- vi. They offer some of the inflight services like, food and beverage only on extra payment.
- vii. Usually, they use single type of aircraft and thus require to spend less on separate maintenance teams
- viii. They employ a smaller number of employees per aircraft, as compared to FSCs. Even the number of inflight staff will be less and a good share of them may be working on contract basis.
- ix. LCCs usually offer single class carrier with standardized treatments for all passengers.
- x. No additional features are offered, like, Frequent Flyer Programme (FFP) benefits, interlining facilities and lounges.
- xi. LCCs encourage onboard sale of Food items. Gift items like pen, purse, books, other gift items, etc. are also allowed to be sold onboard to make extra revenue.

- xii. LCCs prefer to operate services at off - peak times and the prime focus is on less congested airports so as to get low landing charges and quick turnaround time.
- xiii. Usually, they operate at a higher seat density with less legroom. Therefore, more seats are available and lead to higher load factor.
- xiv. LCCs usually reduce distribution cost by avoiding intermediaries and sell seat primarily through own websites, own offices and call centers. Now a day, other online intermediaries are also being used for product distribution.

LCCs attempted innovations has help increase their market share. According to International Civil Aviation Organization (ICAO), Low-Cost Carriers have played a major role in the extraordinary expansion of air transportation worldwide for the last fifty years and it is predicted to continue its growth tendency. The LCC sector carried 984 million passengers in 2015, which was 28 per cent of the world total scheduled passengers. Full-Service Carriers (FSCs) are also adapting their strategies to cope up with the challenges in the air transport sector.

While LCCs are still growing at a fast rate, a new business model has emerged. It's called *Hybrid Airlines*, a business model which is neither a FSC nor an LCC. It is a blend of Low-Cost Carrier business model and Full-Service business model. While LCCs focused on short haul and domestic routes, Hybrid airline may undertake service on longer routes as well. They usually provide standard inflight service. The ticket rates may be lower than that of FSCs, but higher than that of LCCs.

In Indian market, by 1990s, private airline started playing key role in air transportation. Although, some of the airlines started in 1990s are no longer offering any service now. The airlines owned by Government of India Air India(international services), Indian Airlines (domestic services) have been combined to forma single airline, called Air India. LCCs entered into Indian market, by mid of 2000s. Air Deccan was the first LCC operated in India. Later a number of other LCCs entered into Indian market. Now, the number of LCCs are more than that of FSCs. Hybrid airlines are also there, conducting transport services in the Indian market.

14.6 EXPANSION OF AIR TRANSPORT INFRASTRUCTURE

The new millennium has seen the fast expansion of air transport infrastructure. The number of airports is constantly increasing, with many countries like India opting to construct green field airports. While others are focusing on expanding existing airports to accommodate the increasing air transport demand. The demand for air transportation has been increasing steadily over the last few decades, except during the pandemic related crisis period. New airlines are entering into the market while existing airlines are expanding the route networks. Moreover, the number of passengers has been increasing consistently. Large scale expansion programmes are happening in India. The need for air transport expansion in the country is high. Already, a number of airports have added more terminals and facilities. Many of the existing runways are extended by length and width. The need for expansion in the infrastructure is due to a range of factors such as -

- i. Increasing travel demand is the prime reason. Every country has been facing growth in air passenger demand.

- ii. Second is the entry of new airlines. By this, airports need to have new slots to allocate for the new comers.
- iii. Introduction of new aircrafts is another reason. For instance, A380 was introduced into commercial transportation by the mid of 2000s. It's a large aircraft and it need farther and wider runway for landing and takeoff. Therefore, many of the major airports in the world started expanding the runways in order to enable the large aircrafts to land and take off smoothly.
- iv. Increase of import and export is another reason, since the cargo terminals are being expanded as part of it.
- v. Ensuring latest facilities and services also need more space within airports.
- vi. Moreover, airports are in competition, particularly from a tourism point of view. This urge many airports to have expansion and to improve services, facilities and attractiveness.

According to Airports Authority of India (AAI), the modernisation and upgradation of airport in the country is being done keeping with the ICAO standards and recommended practices. The priority is given to safety, passenger facilities, aircraft and cargo handling, while deciding the allotment of funds among different upgradation and modernization schemes. Greenfield airports (newly constructing airports) are being built where - an existing airport is unable to meet the projected requirements of traffic, or a new focal point of traffic emerges with sufficient viability; and there is a minimum aerial distance of 150 kilometers from an existing airport. Expansion and up gradation are taking place in the air navigation services as well. Cargo transport facility expansion is also taking place simultaneously. Technological and other improvements are being ensured by the introduction of automation and computerization, mobile check-in counters, improvement in emigration/immigration and security checks, mechanization of baggage and ground handling services, provision of aero-bridges, introduction of better systems of passenger transfer between terminals, improvement in cargo terminals, reduction in bunching of flights and contracting out of operating and maintenance facilities. Moreover, expansion and additions are taking place in having more commercial establishments within airports to support the passengers and to increase revenue. India is now promoting private participation or privatization in airport construction on any one of the modes from Build-Own-Transfer (BOT), Build-Own-Lease-Transfer(BOLT), Build-Own-Operate (BOO), Lease-Develop-Operate (LDO), Joint venture, Management Contract, etc.

14.7 AIRPORTS: A DESTINATION FOR TRAVELLERS

The importance of airports in tourism has been discussed in Unit 1. For a tourist destination, an airport plays a vital role particularly for ensuring global accessibility. Major destinations now a days keep close collaboration with airports and attempt to ensure tourist appeal within airports itself. Unlike other passengers, tourists need more facilities and services within airports. For example, they may wish to shop and have refreshments within airports.

Nowadays, airports themselves have touristic expectations. Modern airports are being envisaged as a great place to eat, shop, dance, sleep, socialize and have meetings.

While choosing destinations, airports also can be a matter of consideration for the travellers. In addition to having more centers for shopping, airports are investing in art, events, and entertainment to enhance passenger experiences. Some of the airports

have almost all facilities that of a mini-city. Accommodation centres and conference venue are arranged within the airport premises. Multiple restaurants provide the options for the travellers to choose the right one that suit them well. VIP/Airline lounges provide a touch of luxury to affluent frequent flyers and business and first-class passengers. Modern Spa is seen in almost all international airports. Wide range of facilities and services are arranged within airports, and thus, *airports are posing as a destination in their own capacity*. Couple of airports who can give competition to destinations are given below:

1. **Changi Airport, Singapore:** Changi Airport, Singapore is considered the best airport and has facilities for tourists to vacation within the airport. Different terminals of it are decorated with fuses artistry, architecture and nature's wonders in the form of forest and verdant gardens for travellers to relax. Shiseido Forest Valley and HSBC Rain Vortex at Jewel Changi are wonderful attractions. Jewel Changi has incredible forest like space and verdant gardens for travellers to relax. A 40-metre-high indoor waterfall flanked on all sides by tropical plants and over 2,000 trees are the main attraction over there.



Figure 14.1 : Changi Airport, Singapore

A Butterfly Garden, Sunflower Garden and Cactus Garden are all present within the airport. Number of family-friendly activities, including indoor playgrounds, the island's tallest slide, a Family Zone, a Canopy Park, entertainment corner for teenagers and more than 100 eateries within the airport provides plenty of attractions for the travellers.

2. **Hong Kong Airport:** HK airport is an example which has been upgrading facilities to attract maximum tourists. In addition to the common tourist attracting facilities and services, it organizes a four-month long cultural festival, which encompasses music and art shows. It also has a workshop in which passengers can make personalized gifts and enjoy VR experiences. The Airport has more than 80 culinary outlets, 17 specialty coffee shops, 40 luxury shops as well as Aviation Museum and a total of six exhibitions where passengers can learn more about the history and people of Hong Kong, the truths behind Oriental medicine and Chinese tea as well as the heritage of Cantonese Opera.



Figure 14.2 : Hong Kong Airport

Other airports which have something more to offer to the passengers include Hamad International Airport(Qatar) which has Swimming Pool facility, Dubai International Airport (U.A.E.) offers the facility of Interactive Kids Zone while Munich International Airport (Germany) offers the facility of Ice Rink. At Vancouver International Airport a spa, dental service and an aquarium targeting at travellers is available. Incheon International Airport (South Korea) offers the attraction of Indoor Garden, Kuala Lumpur International Airport (Malaysia) has Jungle Boardwalk while few airports like San Francisco International Airport (U.S.A.) offers the facility of Yoga Room.

Check Your Progress-2

1. Summarize the trends in air transport sector.

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2. Differentiate between low-cost carriers and full-service carriers

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3. Explain the reasons in the trend of expansion taking place in the airport Sector.

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4. ‘Modern airports resemble cities. Comment upon the sentence

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14.8 LET US SUM UP

Air transport has been growing and it is poised for further expansion. Moreover, the sector is experiencing innovations and developments at regular intervals. The impact of Covid-19 on air transport sector too caused transformations in the sector as it had to face new challenges for survival. This sector has been facing augmented growth when LCCs took the centre stage and now, there is healthy competition taking place between the traditional business models and the new business models in the airline sector. Air transportation is always on the path of evolution. Newer technologies and concepts emerge at regular intervals and that make the air transportation more comfortable and safer to travel. With regard to tourism, air transport is the most favourable one compared to other modes, particularly on long- haul routes. All the transformations taking place in the realm of air transportation is favourable for tourism. For instance, the way airports are getting upgraded with newer concepts, the direct beneficiary of it are the tourists. Airports are now a place for relaxation, shopping and refreshments.

In this modern era of air transport, a number of factors are there that act as challenges of airports. Safety and security, increasing customer preferences and experiences, growing competition, etc. pose severe challenges for airports. Airports are still in the path of further expansion and growth. Information and communication technology integration in air transportation is highly beneficial for tourists. Online intermediation is gaining strength in air transport sector. Passengers have the freedom to book, cancel or change the bookings at any point of time and from anywhere. Passenger handling within airports became hassle free by the use of fully automated information systems within airports. Moreover, air transport sector is taking utmost efforts to ensure sustainability parameters and to strive at eliminating the carbon emissions.

Overall, paradigm shift is visible in the air transport sector and it is poised for further sophistication and advancements in the years to come. Airports are facing expansion at a greater pace now a days and modern airports are like mini cities and the leading airports are competing hard to enhance the experience of the travelers while they are in the airports. As years pass by, newer trends will emerge, and as curious students, you should watch the trends in the sector to have a better understanding of the air transport sector.

14.9 CLUES TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress - 1

1. Refer to section 14.2
2. Refer to section 14.3
3. Refer to section 14.4

Check Your Progress - 2

1. Refer to section 14.4, 14.5, 14.6 and 14.7
2. Refer to section 14.5
3. Refer to section 14.6
4. Refer to section 14.7

14.10 ACTIVITIES

1. Visit a travel agency that issues international air tickets and discuss with the staff over there to understand the global distribution system they are using, the features of those systems and the process of booking tickets.
2. Check and compare the facilities of different airports of India.



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ANNEXURE : TYPES OF AIRPORTS

As per Airport Authority of India (AAI), "airport" means a landing and taking off area for aircrafts, usually with runways and air craft maintenance and passenger facilities. It also includes aerodrome as defined in clause (2) of section 2 of the Aircraft Act, 1934

The Federal Aviation Administration (of USA) defines an "airport" as "*Any area of land or water used or intended for landing or takeoff of aircraft including the appurtenant area used or intended for airport buildings, facilities, as well as rights of way together with the buildings and facilities.*"

Airports can be classified and categorized based on many factors like the

- Passenger – civil, military or only cargo,
- Length of the air-strip and the size of the aircraft that can land,
- Ease of take-off and landing,
- Volume of traffic being handled every day,
- Development process,
- Ownership,
- Scheduled air services,
- Air Traffic Control Facilities and so on

The classification and categorization of airports vary from nation to nation as classification followed is the one that best suits the nation. Refer to Figure 1.2 that gives us different types of airports based on *few of the criteria*. Let's now discuss the types of Airports as given in Figure 1.2

A. Based on Passenger Accessibility

Passenger Accessibility here refers to airports' classification based on whether or not civil passengers have accessibility to the airport. Based on the passenger accessibility, we can categorize airports as: -

1. **Military** - Military airports are those which are meant exclusively for the Defence purposes of a country. They are not accessible to civilians or for any commercial or scheduled flights. These airports are under the defence forces of the country and maintained and manned by armed forces.
2. **Civil** – Civil aviation airports include all types of airports which are accessible to the general public and used for commercial scheduled flights. Scheduled flights include all airline services undertaken on a regular basis and are based on pre-fixed schedules, i.e., flights have a published time of departure and arrival. Civil aviation airports consist of varied types, wherein General aviation and Commercial airports are the major categories within it. Civil Airports can further be categorized based on whether or not they cater to Scheduled Flights and extend of passenger services offered at these airports: -

- a. **General Aviation Airports** - This includes publicly-owned general aviation airports that do not have scheduled services and have fewer than

2,500 annual passenger boardings. General aviation airports, a category within civil aviation, cater to the requirements of a number of flying activities, like instructional flying, pleasure flying, business flying, aerial work, agricultural flying and other flying. In some countries, like USA, the number of general airports is more than that of commercial airports.

- b. Commercial Airports** - Commercial airports receive scheduled passenger services and have at least 2,500 passenger boardings each calendar. Every country usually has commercial airports for ensuring global connectivity. An airport for commercial purposes will have not only the facilities and services for the aircraft to land and take-off, but also have a range of commercial services that can cater to the requirements of the passengers. A wide variety of commercial facilities ranging from shops, duty free shops, gift shops, restaurants to conference facilities are available in these airports. Typically, commercial airports are of three types -

i. International Airports - ICAO defines an international airport as “any airport designated by the Contracting State in whose territory it is situated as an airport of entry and departure for international air traffic, where the formalities such as customs, immigration, public health, agricultural quarantine and similar procedures are carried out.” (ICAO Definitions, UVS International). International airports allow one to travel all over the world as it usually focuses on the scheduled air transport services to foreign countries. The key difference with the domestic airports is that the international airports are set up for border control and customs inspections.

ii. Domestic Airports - Domestic airports have scheduled services to destinations located within countries and generally only allow flights from within the same country. At some instances we come across *Model Airports* - these are the domestic airports which have minimum runway length of 7500 feet and adequate terminal capacity to handle Airbus 320 type of aircraft; and if required, can cater to limited international traffic. Unlike, International Airports, Domestic airports do not have customs and immigration facilities.

iii. Custom –A customs airport is an airport notified by the appropriate customs authority of the country as an airport which shall be used for the unloading of imported goods and the loading of export goods or any class of such goods. Customs airports may or may not have international commercial flights. In case they have international scheduled flights, custom and immigration facilities will be made available only for limited international operations by national carriers, and for foreign tourist and cargo charter flights. The customs officers May only be in attendance for scheduled international services. Such airports may also have boarding stations in it or near them for the purpose of boarding or disembarkation from vessels by officers of customs.

- 3. Civil Enclaves in Defence Airport** - Civil enclaves are part of airports of armed forces that are used for commercial flights. In India, there are 26 civil

enclaves in Defence airfields. Civil Enclaves means the area allotted at an airport belonging to any armed force of the Union, for use by persons availing of any air transport services from such airport or for the handling of baggage or cargo by such service. It includes land comprising of any building and structure on such area.

B. Based on Ownership

Airports across the world has different ownership pattern. We can classify Airports based on who is maintaining and providing services at the airport. Based on ownership of the airport we can say that airports are:

1. **Public Sector/ Government / State owned** – These refers to the Airports that are looked after by the Government and is a Public Sector undertaking. In India, Airports till few years ago were owned and maintained only by the Airport Authority of India (AAI) under the Ministry of Civil Aviation. Today the scenario is changing, although AAI still has airports that are entirely under its jurisdiction.
2. **Privately Owned** – Privately Owned airports refer to the airports that were built by private operators or private operators have taken the airports on lease form the government. The management, operation and development of the airport will be entirely the responsibility of the private entity.

In India ‘private airport’ means an airport owned, developed or managed by any person or agency other than AAI or any State Government, or any person or agency jointly with the Authority or any State Government or both where the share of such person or agency as the case may be in the assets of the private airport is more than fifty per cent. Indian government has identified 13 airports that will be privatized by year 2022.
3. **Public Private Partnership (PPP) Model:** As the name suggests, these airports are in PPP model, with both public and private sector having a stake in the Airport. In India, PPP model can be taken up either for the management of an airport on lease or by joining AAI in the development and management of a green field airport.

C. Based on Location

Location here refers to either land based or water based.

1. **Land Based** – Almost all the airports that we see are land-based airports.
2. **Water Based** – A water aerodrome is an area of open water used regularly by sea planes, floatplanes or amphibious aircraft for landing and taking off. Although all water aerodromes are not like the airports we commonly come across, yet many of these water aerodromes are the only way to reach an island. We have the example of Nanaimo Harbour Water Aerodrome in British Columbia, Canada (IATA Code – ZNA) which was formerly classified as an airport; and still is an airport of entry, staffed by Canada Border Service Agency. We have many examples of water aerodromes across the world.

In India, under the UDAN Scheme, 10 water aerodromes are being developed at Gujrat, Assam, Telangana, Andaman and Nicobar Islands and Andhra Pradesh. These water aerodromes along with the land-based airports will be useful for local short distance travel as well as act as a tourist attraction at some of the destinations.

D. Based on Development Process

This refers to the stage and process of Airport Development and can be classified as:

1. **Brown Field Airport:** Brownfield Airports are the airports which are being modified or upgraded from existing facilities. For example, extension and upgradation of the infrastructure and facilities at IGI Airport would be considered a Brownfield Airport Project
2. **Green Field Airport:** Greenfield Airport means a new airport which is being built from scratch in a new location either because the existing airport is unable to meet the projected requirements of traffic or the city in question does not already have an airport. The word Greenfield originates from software engineering, meaning a project which lacks any constraints imposed by prior work. In India, rules have been framed for Green Field Airports, like No Greenfield airport will normally be allowed within an aerial distance of 150 kilometers of an existing airport; and so on.

E. Based on Air Traffic Control Tower

Air Traffic Control (ATC) is always in communication with pilots, especially during the take-off and landing of a flight. The role of ATC is critical for the safety of aircraft and its passengers. Air traffic control(ATC) is responsible for providing safe, orderly, and expeditious flow of air traffic at airports where the type of operations and/or volume of traffic requires such a service. Pilots communicates with ATC using two – way radio and have to acknowledge and comply with the directions of ATC to ensure a safe flight. We see that there are two types of airports based on ATC -

1. **Towered** – Towered airports refer to the airports that has an operating Air Traffic Control(ATC) tower within its premises.
2. **Non-Towered** – Non towered airports are those airports that are not served by an operating air traffic control(ATC) tower. Although it seems unlikely, but non towered airports are much more common than towered fields. For example, nearly 20,000 airports in the United States are non towered, compared to approximately 500 that have towers. Millions of safe operations in all types of aircraft are conducted at non towered airports in a variety of weather conditions since there is a set protocol to follow when using a non-towered airport.

We have discussed how the airports can be classified based on many parameters. Other than the above classification we also see that in some parts of USA a different classification of airports is mentioned as– National, Regional, Local, Basic and Unclassified. These airports are identified thus based on the reach of the airport, passenger traffic, volume of flights as well as connectivity among other things.

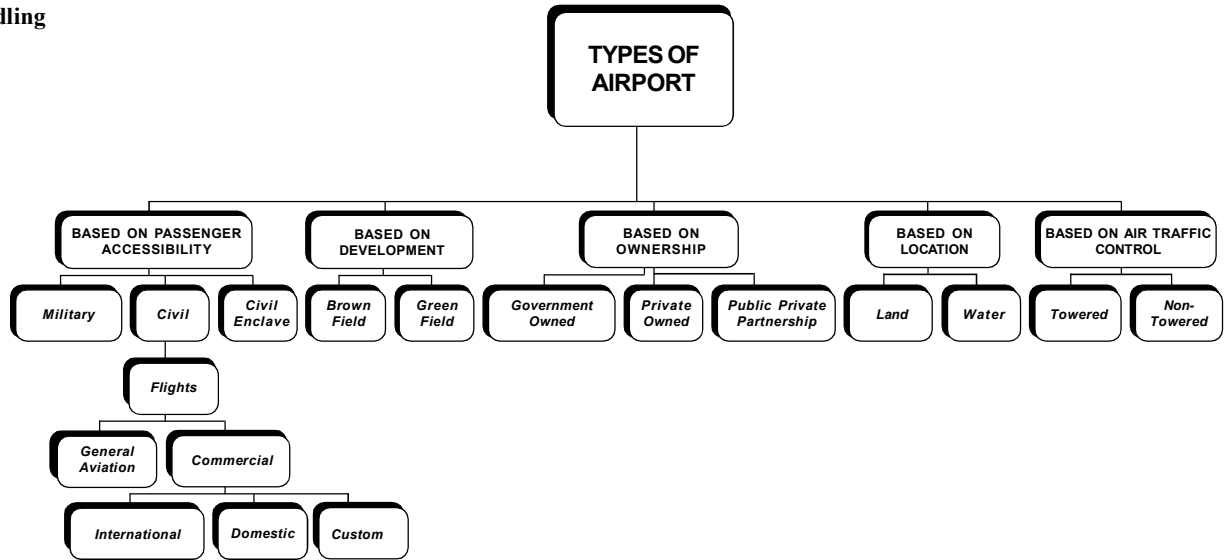


Figure 1.1:
 Source: P. Suklabaidya, 2022

As per Airport Authority of India (AAI), Airports are presently classified in the following manner:-

1. **International Airports:** These are declared as international airports and are available for scheduled international operations by Indian and foreign carriers. Presently, Mumbai, Delhi, Chennai, Kolkata, Hyderabad, Bangalore, Nagpur, Cochin Thiruvananthapura, Ahmedabad, Amritsar, Guwahati, Jaipur, Goa, Calicut, Srinagar, Portblair, Lucknow, Varanasi, Tiruchirapalli, Mangalore, Coimbatore, Bhubaneswar and Imphal are in this category.
2. **Custom Airports:** These airports have custom and immigration facilities for limited international operations by national carriers and for foreign tourist and cargo charter flights. These include Gaya, Patna, Madurai, Pune, Bagdogra, Chandigarh and Visakhapatnam.
3. **Domestic Airports:** All other airports are covered in this category.
4. **Civil Enclaves in Defence Airport:** There are 26 civil enclaves in Defence airfields

AAI has also proposed a new Classification of Airports. AAI plans to develop the capacity of airports in accordance with the future projections, and it is proposed to reclassify the airports as follows:

1. **International Hubs:** The category of ‘International Hubs’ will cover airports currently classified at ‘international airports’ and those eminently qualified to be upgraded to be such. These would at present cover Delhi, Mumbai, Chennai, Calcutta and Thiruvananthapuram. Airports at Bangalore, Hyderabad, Ahmedabad, Amritsar and Guwahati can be added to the list as and when the facilities are upgraded to the desired level. International hubs would be used for the dispersal of international traffic to the hinterland. In these airports, the facilities shall be of world class standards, including convenient connections to international and domestic passengers, airport-related infrastructure like hotels, shopping areas, conferencing and entertainment facilities, aircraft-maintenance bases, etc.

2. **Regional Hubs:** Government is keen to encourage development of regional airlines based on small aircraft to provide air-linkages in the interior areas of the country. Regional hubs will have to act as operational bases for regional airlines and also have all the facilities currently postulated for model airports, including the capability to handle limited international traffic. The identification of Regional Hubs will be made on the basis of origin-destination surveys, traffic demand and the requirements of the airlines. State Govt. will be closely associated as co-promoters of regional airlines.
3. **Other operational airports:** These will be developed so as to be cost-effective on the basis of individual needs to meet the requirements of traffic handled by them. Airports serving in the State Capitals will be given priority.

The status of individual airports may be reviewed at five-yearly intervals, on the recommendation of a Committee of Experts. Grant of status as international hubs will be given only with prior Cabinet approval. International hubs shall have the status of 'international airport' for the purposes of bilateral agreements.

