UNIT 6 AIR TRANSPORT

Structure

6.0 OBJECTIVES

After studying this unit you should be able to:

- explain the importance of air transport
- trace the history of air transport in India
- describe the working of AIR India, Indian Airlines and Airport Authority of India
- explain the role of other auxiliary organisations related to air transport in India
- provide details of India's import and export trade by air
- evaluat the steps taken towards privatisation of air transport in India
- desribe the problems and prospects of air transport in India and progammes for the Ninth Plan.

6.1 INTRODUCTION

Air transport has a significant role to play in a vast country such as India with major industrial and commercial centres spread all over the country. It offers saving in time that cannot be matched by surface transport over long distances. This advantage of speed certainly helps in cutting down the transit time in the hinterland movement of export cargo. The share of airborne trade to total foreign trade of India during the year 1998-99 was about 32%. In India, the Ministry of Civil Aviation has been entrusted with the responsibility of developing the air services and the related infrastructure. In this unit you will lean about how civil aviation is organised in India, how far the various airlines and Airport Authority of

India have succeeded in providing the necessary air transport and infrastructure facilities, what has been the amount of airborne trade (both exports and imports) of India, and what are the problems and the plans for the future.

6.2 SIGNIFICANCE OF AIR TRANSPORT

In the international movement of goods, the role of Air Transport is well-organised. Amongst the different modes of transport viz., sea, rail and road, the air transport has the advantage of (i) taking least time for carriage, and (ii) handling high valued or perishable goods. The disadvantages are (i) comparatively high transportation cost, and (ii) unsuitability for transportation of bulk commodities. Thus the relative economy in the carriage of merchandise in the international trade by air, vis-a-vis other available, modes of transport is conditioned by the factors such as unit value of commodities, need or adherence to delivery schedule, nature of commodity (perishable/non-perishable), location of partner countries ports in relation to in-country originating centre etc.

Air transport, the youngest member of the transportation system, has made rapid strides during the last three and a half decades. Today, about 20-25 per cent of the total world trade in value terms moves by this mode of transport. The unprecedented growth of air cargo industry in these years has been due to the acceptance of concepts like 'Just in Time Shipments (JIT)' and 'total distribution cost', the world over.

The improvement in air technology and introduction of containerisation in air cargo, coupled with the technological advancements in production processes of a variety of products have enlarged the list of items for export by air. Currently, not only perishables and highly valuables, but many products like machinery parts, electrical/electronic equipment, textiles and ready-made garments, leather garments and travel goods, toys, hand-tools etc., move by air transport.

It may be noted that the total quantity of cargo moved in overseas trade of India increased from 1,033 lakh kg. In 1981-82 to 6,591 lakh kg. in 1998-99. And airborne trade (both exports and imports taken together) in value terms accounts for almost one-third of the country's total foreign trade.

6.3 HISTORY OF AIR TRANSPORT IN INDIA

The real progress in Indian civil aviation started in 1920 when the Government of India constructed a few aerodromes. The Civil Aviation Department was set up in 1927 and number of flying clubs were founded. The progress, however, was very slow. It was during and after the Second World War that a considerable progress was achieved. More aeroplanes were purchased, new services were started and their frequency increased. In 1946, the Government of India laid down in avaiation's policy and thus began the encouragement and development of internal and external transport services through a limited number of sound and reliable private commercial concerns with necessary Government help. In 1946, the Government set up the Air Transport Licensing Board which gave 11 licences.

In 1950, the Air Transport Enquiry Committee, known as Rajadhyaksha Committee, was appointed. The Committee recommended the intergration of all companies so as to remove cut throat competition and secure scientific and zonal distributions of work. But, somehow, the private companies did not respond and so the Government had to nationalise civil aviation. It was felt that

a) nationalisation would raise operational efficiency;

b) it would result in better organisaton of civil avaiation and would enable the Government to get trained technicians, pilots etc., and

c) it would reduce duplicating the services and wastage of flying hours and thus would reduce costs and losses.

In 1953, the Air Corporation Act was passed by the Parliament under which the Indian Air Lines Corporation was to run internal services and Air India International was to run external services.

The civil aviation is structured into three distinct functional entities-regulatory, operational and infrastructural. The operational entities are: Indian Airlines (IA), Alliance Air (subsidiary of IA) and private scheduled airlines and air taxies which provide domestic air services and Air India (AI) whch provides international services. Indian Airlines also covers some neighbouring countries. Pawan Hans Limited was incorporated in 1985 to acquire and operate helicopters in the country. It has been renamed as Pawan Hans Helicopters Limited. It provides air support services to Oil Sector in their offshore operations and connect remote and inaccessible areas. The infrastructural facilities are provided by Airports Authority of India which came into being on 1st April, 1995 as a result of the merger of National Airports Authority (NAA) and International Airports Authority of India (IAAI). It is responsible for the management of all airports (domestic and international) and civil enclaves at the defence airfields. The Indira Gandhi Rashtriya Uran Academy (IGRUA) is the premiere flying institute responsible for provision of flying training for award of Commercial Pilots Licence and Commercial Helicopters Pilots Licence. Hotel Corporation of India, a Subsidiary of Air India Limited is responsible for providing inflight catering and operating hotels in the vicinity of airports for catering to the transit passengers. The Directorate of Civil Aviation (DGCA) is the regulatory body responsible for regulation of air transport services to/from/within India, registration of civil air crafts in India, formulation of standards of airworthiness and grant of certificates of air worthiness to civil aircrafts registered in India.

Several significant developments took place in the field of civil aviation during the Eighth Plan period. With the repeal of the Air Corporation Act 1953 in 1994, the monopoly of Indian Airlines, Air India and Vayudoot over scheduled air transport services ended. Consequently, 6 private operators who were hitherto operating as air taxis were granted the status of scheduled airlines. During Eighth Plan, 7 scheduled operators and 19 air taxi operators had been given permits for operation of domestic air transport services in India. Air India Limited and Indian Airlines Limited were registered as companies under the Companies Act, 1956 and the undertakings of Air India Corporation and Indian Airlines Corporation were transferred to the respective new companies w.e.f. 1.3.1994. Vayudoot Limited was merged with Indian Airlines Limited w.e.f. 25 th May, 1993.

Against an outlay of Rs 3,998 crore a sum of Rs. 7,334.11 crore was spent during the Eighth Plan. The bulk of the outlay (98.8%) was finaced from internal and extra budgetary resources (EIBR). The plan of Air India, Indian Airlines, Pawan Hans and Hotel Corporation of India was entirely financed from their IEBR.

At present, there are two scheduled private airlines which provide regular domestic air services along with Indian Airlines. In addition, there are 41 non-scheduled operators providing air-taxi/non-scheduled air transport services. Private operators cater to nearly 41.4% of the domestic air traffic. A new policy on domestic air transport service was approved in April, 1997 according to which barriers to entry and exit to this sector have been removed and choice of aircraft has been completely left to the operator.

Check Your Progress A

1 State the two main advantages of air transport.

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2 State the two significant developments that took place in the field of civil aviation in India.

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3 Fill in the blanks.

i) At present almost .... per cent of the total world trade in value terms moves by air transport.

ii) The share of airborne trade to total foreign trade of India during 1998-99 was .... per cent.

iii) The civil aviation is structured into .... distinct entities.

iv) Pawan Hans Helicopters Limited provides air .... services to oil sector and .... remote and inaccessible areas.

v) The merger of NAA and IAAI resulted in the formation of ....

6.4 AIR INDIA

Air India has come a long way since its establishment as a statutory corporation in 1953. The international passenger traffic to/from India has shown a grwoth of 4.8 p.a. during 1987-94. The growth rate for foreign carriers has been 6.3% p.a. whereas that of Indian carriers it has been only 1.74%. As a result, the share of traffic for Indian carrier (AI and IA) in the international passenger traffic has shown a steady decline from 40% in 1988 to 30% in 1994. Table 6.1 indicates the growth in fleet strength and traffic carried by Air India.

Table 6.1: Fleet Strength and Traffic—Air India

Year	Fleet Strength	Revenue Tonne-Kms. (Lakh)	Passengers Carried (Lakh)
1960-61	13	756	1.25
1970-71	10	2,752	4.87
1980-81	17	9,801	14.18
1990-91	24	13,810	21.61
1995-96	26	16,190	28.53
1996-97	28	14,995	29.51
1997-98	26	15,024	30.63
1998-99*	26	15,201	31.66

**Provisional*

The fleet of Air India at the end of the Seventh Plan (1989-90) consisted of 21 aircrafts comprising ten B747-200's, six A310 aircraft, two B747 combis and three A 300-B4. In addition, it took one B747F on wet lease for freighter operation and one IL-62M for passenger operations on India/USSR route. One IL-76 is also used in addition to freighter capacity. The growth rate in terms of traffic has been around 3 per cent per annum during the Seventh plan period.

During the Eighth Plan (1992-97) Air India was expected to have a traffic growth at a rate of 14.4 per cent. In terms of targets, the capacity available at the end of the Eighth Plan was to be 3061.6 million tonne kms. and anticipated capacity utilisation of 1983.3 million revenue tonne kms. While the capacity increased by 26.9% to 2,504.3 million tonne kms., the traffic registered a growth of 30.5% in the Eighth Plan, the capacity utilisation inreased to 1,499.4 million tonne kms by 1996-97. Its market share in the international traffice, however, declined to a level of 20% in 1993 which slightly improved to 21.9% in 1996. During Ninth Plan period the international passenger traffic is expected to grow at 7% p.a. Air India has planned for an average annual growth rate of 13.3% with its share in international traffic to increase from 21.97 in 1996 to 27.1% by the end of Ninth Plan. At present, it owns a fleet of 26 aircrafts consisting of six B-747-200, two B-747-300 (Combi), seven B-747-400, three A 300-B4 and eight A310-300 aircrafts. During 1998-99, it carried 3.17 million passengers as against 3.06 million in 1997-98 and its revenue in tonne kms. was 1520 million.

As for the financial performance of Air India during the Eighth Plan, it recorded profits during the first three years but incurred losses during 1995-96 and 1996-97. Even the first two years of Ninth Plan i.e., 1997-98 and 1998-99 it incurred losses to the tune of Rs. 181 crores and Rs. 174 crores respectively. This was despite a 7.8 per cent increase in its operating revenue. During April-September, 1999, the company has incurred an estimated loss of Rs. 5.3 crore which is significantly lower as compared to a loss of Rs. 127.4 crore during the corresponding period of 1998-99 last year. The loses can be attributed to factors like increase in expenditure on account of interest and depreciation on new aircraft, reduction in yield due to increased competition and cost of operations, increase in wage bill, other staff costs and landing, handling and navigational charges, and depreciation in the value of rupee etc.

The key to improvement in the financial performance lies in maximising yields and improving the net margins. To achieve this objective, Air India should intensify the marketing efforts, improve its product and on-time performance. In the Ninth Plan, as a apart of turn around strategy, route rationalisation and redeployment of capacity would be a dynamic function so that Air India would be able to respond proactively to variations in market demand.

6.5 INDIAN AIRLINES

Indian Airlines Corporation (IAC) came into existence in June, 1953 when eight scheduled air transport companies were nationalised. Being the major air carrier of the country, it provides air services on the domestic routes and operates 57 stations in the country and 17 stations in the neighbouring 14 countries. The long-term annual growth rate in domestic passenger traffic from 1960-61 to 1987-88 has been around 10%. However, during the period 1988-93, the growth rate was erratic and negative on an overall basis. As a result of the steps taken for liberalising the economy, coupled with improved industrial relations in Indian Airlines and availability of additional capacity with private operators on domestic routes, the domestic passenger traffic has started growing significantly since 1993-94, and the growth rate improved to 19.8% and 10.1% in 1993-94 and 1994-95 respectively.

The growth in the fleet strength and traffic carried by Indian Airlines since 1960-61 is given in Table 6.2.

Table 6.2 : Fleet Strength and Traffic—Indian Airlines

Year	Fleet Strength	Revenue Tonne-Kms. (lakh)	Passengers Carried (lakh)
1960-61	88	1,000	7.90
1970-71	73	2,000	21.30
1980-81	49	4,003	54.29
1990-91	56	6,992	78.66
1995-96	59	7,227	77.40
1996-97	54	7,652	81.70
1997-98	54	8,275	83.80
1998-99*	53	8,400	80.10

**Provisional*

IA fleet at the end of the Seventh Plan (1989-90) consisted of 11 Airbus A-300, 24 Boeing-747, 14 A-320, 3 HS-748 and 4 F-27. During 1989-90, 15 A-320's were acquired of which one was lost in an accident in February 1990. The Seventh Plan had anticipated a growth rate of 8 per cent per annum in traffic for the Indian Airlines. The actual growth rate, however, has been around 5 per cent per annum. Indian Airlines has projected domestic passenger growth rates of 8 per cent per annum in Eighth Plan with 1989-90 as the base year. In terms of targets, Indian Airlines would have capacity equivalent to 1916 million. A viable tonne kms and traffic of 1361 million Revenue tonne kms. by the end of the Eighth Plan (1992-97). But, it achieved a negative growth rate of (-) 1.9% and (-) 8.4% in capacity and traffic respectively in the Eighth Plan. This is largely because Indian Airlines could not utilize its fleet and other facilities optimally due to the exodus of pilots and engineers after the opening up of the sector to the private operators. The fleet of Indian Airlines at the end of the Eighth Plan consisted of 10 A-300, 30 A-320, 12 B-737 and 3 Donnier 828 aircrafts. All the B-737 aircrafts are being operated by its wholly owned subsidiary, Alliance Airlines.

As for the financial performance of Indian Airlines, it incurred losses throughout the period of Eights Plan. The airline which was making profits till the end of 1980s, started making losses since 1989-90. From 1989-90 to 1996-97 it incurred losses of over Rs. 1,000 crore including a sum of Rs. 775 crore in the Eighth Plan. To cope with the general recession in the economy, sluggish market conditions and stagnation in the overall air travel market during the year, innovative and aggressive market strategies were inhaled by the company to maintain and improve its revenues and market share. As a result, during the year 1998-99, the operating profit increased to Rs, 294 crore as compared to Rs. 259 crore in 1997-98. The company has achieved the profit despite the continued economic downturn and additional capacity induction by the competition and weakened demand which resulted in a decline in occupancy level and downward pressures on yields as compared to 1997-98. During 1999-2000, the company earned a post tax profit of Rs. 45.27, a 245 per cent increase compared with Rs. 13.12 crore in 1998-99 crore. As for the market share of Indian Airlines in the domestic passenger traffic, it is presently hovering around 65%. The domestic traffic during the Ninth Plan period is projected to grow at the rate of 12.5% per annum. The Indian Airlines has targetted a market share of around 55-60% in the Ninth Plan so that by the end of the Ninth Plan its domestic traffic could increase to around 15 million passengers. In order that Indian Airlines continue to play a role distinct from the private airlines and achieve its targets, it is necessary to take suitable financial and organisational measures to make it a viable and vibrant enterprises.

6.6 PAWAN HANS

Pawan Hand which was incorporated in 1985 acquired 48 helicopters, consisting of 27 Dauphin and 21 Westland helicopters. of these, 6 Dauphin helicopters were transferred to State Government of Uttar Pradesh, Madhya Pradesh, Bihar and Gujarat. Four helicopters were lost in accidents in 1988-89 and the Corporation had a fleet of 3 helicopters consisting of 20 Dauphin helicopters, three Bell 206L4, two Bell 407, two Robinson R-44 and three Mi 172 helicopters.

The Primary users of helicopters are ONGC, NTPC, etc. Considering the high operational cost and foreign exchange outgo in maintenance and operations, it is necessary that the helicopters services are primarily restricted to oil exploration sector. The provision of maintenance facilities have been accorded priority over acquisition of additional helicopters. The thrust in the Eighth Plan had been on enhanced maintenance capability, manpower development and coordination of the growth of Pawan Hans with its special markets.

The financial position of Pawan Hans is quite sound as it has enjoyed monopoly in the market segment being catered to by it. However, with the entry of private operators, it will have to gear up to meet the challenge.

The total revenue flying hours of Pawan Hans Helicopters Limited during 1988-99 were 18,563 compared to 17,673 during 1997-98. The revenue earnings and net profits during 1998-99 were Rs. 116 crore and Rs. 62 crore comapred to Rs. 111 crore and Rs. 62 crore respectively in 1997-98. The flying hours in April-September, 1999 were 9,367 and revenue and net profit in the same period were Rs. 58 crore and Rs. 29 crore respectively.

However, with the increased competition owing to the entry of private operators, Pawan Hans Helicopters Limited would need to strengthen its customer base and look for new areas. The Company is exploring new areas for providing helicopter services such as police, para military forces, geophysical surveys, adventure sports and tourists chapters. It also hopes to become a maintenance centre for light helicopters for other smaller operators.

6.7 AIRPORTS AUTHORITY OF INDIA (AAI)

To start with, infrastructural facilities were provided by National Airports Authority of India (NAI) and International Airports Authority of India. The NAA provided services such as air traffic control navigational communication, rescue, runway, apron and terminal at all domestic airports. The IAAI came into being in February, 1972 to manage, operate and develop the four international airports at Bombay, Kolkata, Delhi and Madras. Thiruvananthapuram became an international airport in April, 1991. During the Seventh Plan period, new international terminal complexes at Bombay and Delhi and domestic have done well both in respect of physical as well Plan has been on optimisation of capacity utilisation, creation of necessary additional capacities through modular construction and improving the quality of services to passengers.

During 1995, these two Airports Authorities (NAA and IAAI) were amalgamated and a common authority called Airports Authority of India (AAI) was formed. It is responsible for providing safe and efficient air traffic services for effective control of air space. The Authority manages a total of 120 airports (including 28 civil air terminals at Defence Airfields). Total traffic handled by AAI is given in Table 6.3.

The Airport Authority of India was able to attain its goal of upgradation of infrastructure and modernisaton of communication facilities. In order to keep pace with the growth of international trade and for promotion of exports, the airport infrastructure was uptraded in terms of storage space, better handling capacities and development of cargo complexes particularly in Delhi and Mumbai airports. Investments were also made at the hinterland airports, having potential for exports as well as tourism such as Agra, jaipur, Ahmedabad, Varanasi, Lucknow, Thiruvananthapuram. Substantial investment were made for the development of air strips and upgradation of communication facilities and other infrastructure in remote areas like North-East, J&K, Andaman & Nicobar islands as private investment was unlikely on account of the remoteness of the areas and adverse economic factors. Twelve airports were identified for being developed as model airports and renovation/construction of new terminal complexes, extension of runways, upgradation of communication facilities and other passenger related facilities were undertaken on a priority basis.

Table 6.3 : Traffic Handled at A A I Airports

Year	Cargo Handled ('000 tonnes)	Passengers Handled (Lakh)
1960-61	NA	NA
1970-71	NA	NA
1980-81	178.70	107.38
1990-91	377.33	177.23
1995-96	561.58	256.40
1996-97	681.21	364.93
1997-98	705.88	365.31
1998-99*	699.00	369.74

**Provisional*

The Air port Authority of India has significantly improved its financial performance during the Eighth Plan period. It earned a profit after tax of Rs. 208 crore in 1998-99 compared to Rs. 196 crore in 1997-98. The higher profit was mainly due to increase in airport charges and cargo income.

The Authority has a Civil Aviation Training College at Allahabad for imparting training on various operational areas like Air Traffic Control, Radars, Communication, etc. The authoridy maintains the National Institute of Aviation Management training programmes and refresher courses. In addition there is a Fire Services Training School at Narayanpur near Kolkata and the Fire Training Centre at New Delhi for imparting training and conducting refresher courses on fire fighting rescue services.

During Ninth Plan period, the emphasis is on upgradition and expansion of new airports. The capacity of the two major international airports of Mumbai and Delhi to handle traffic would be augmentted. In respect of the domestic airport at Mumbai, Phase III Terminal Building is to be constructed during Ninth Plan period with the latest of state of the art technology in the airport management. At Delhi, the new Terminal building at the domestic airport will after to additional 10 million passengers. Communication and navigational facilities would be improved in the interest of safety. Speed and efficiency would be ensured in passenger and cargo handling. Apart from the national carriers, private agencies would also be encouraged in the provisions of ground handling facilities.

6.8 DIRECTORATE GENERAL OF CIVIL AVIATION

The Directorate General of Civil Aviation (DGCA) is the regulatroy organisation for enforcing civil air regulations. It is responsible for: (1) regulation of air transport services to/from and within India; (2) registration of civil aircraft in India; (3) formulation of standards of airworthiness for civil aircraft registered in India and grant of certificate of airworthiness to such aircraft; (4) licensing of pilots, aircraft maintenance engineers and flight engineers; (5) licensing of aerodromes in India; (6) investigation into air accidents and incidents; (7) implementation of bilateral air services agreement with foreign countries; (8) implementation of bilateral air services agreement with foreign countries; (9) rendering advice on matters relating to air transport; (10) processing of aviation legislation; (11) supervision of training activities of the flying/gliding clubs in India; (12) development of light aircraft, gliders and winches, and (13) type certification of aircraft. **DGCA also coordinates all regulatory functions with the International Civil Aviation Organisation (ICAO).**

The main thrust during Eighth and Ninth Plans has been on stepping up regulatory control through re-organisation, expansion of existing disciplines and development of human resources by intensive advanced training. it would also replace overage trainer aircraft in Flying Clubs.

6.9 OTHER AUXILIARY ORGANISATIONS

Apart from AAI there are a few other organisations which provide auxiliary services in India. These are : (1) Bureau of Civil Aviation Security (BCAS), (2) Indira Gandhi Rashtriya Uran Akademy (IGRUA), and (3) Hotel Corporation of India (HCI). Let us discuss their role one by one.

6.9.1 Bureau of Civil Aviation Security (BCAS)

The Bureau of Civil Aviation Security (BCAS) is the nodal body on all civil aviation security matters. it is responsible for laying down the standards of the pre-embarkation security and anti-sabotage measures in respect of civil flights in India, and for monitoring their enformcemnt at the airports through periodical/surprise inspection and conduct of dummy checks. It also imparts training in aviation security on a regular basis. It has four regional offices at Mumbai, Delhi, Kolkata and Chennai which have a bomb detection and disposal squad each. The Bureau has sniffer dog sqads at the Delhi, Mumbai Kolkata, Chennai and Srinagar airports for detecting explosives and explosive materials.

6.9.2 Indira Gandhi Rashtriya Uran Akademy (IGRUA)

The IGRUA was set up in 1985 to provide training for commercial pilots. The Akademy located at Fursatganj, U.P. is equipped with modern and sophisticated trainer aircraft, flight simulators, computer based training system (CBT), own ATC and runway (recently resurfaced), and audio-visual training aids for imparting effective flying and ground training. Flying training is conducted on Trinidad TB-20 single engine and King Air C-90A twin-engine turbo prop aircraft, fitted with modern instruments and avionics. Commercial Pilots Licence course with multi-engine endorsement and Instruments Rating are conducted on a regular basis. The Akademy has trained 306 Fixed Wing pilots and 20 Rotary Wing pilots till now. Refresher training on Simulator has also been imparted to 85 individuals.

The Akademy, was initially being funded by the Government, Air India and Indian Airlines for meeting its requirement towards capital expenditure. However, since the major beneficiaries of the pilots getting the training from the Akademy are the two national carriers, viz., Air India and Indian Airlines, it was decided that they should be required to contribute towards the expenditure of the Akademy.

With the entry of the private operators on the civil aviation scene, the national carriers are no more the only beneficiaries of the training imparted by the Akademy. Therefore, contributions will also be raised from the private airlines. Efforts will be made to make the Akademy self-sustaining by increasing the number of trainees and enhancing the fees charged from the trainees.

6.9.3 Hotel Corporation of India (HCI)

The Hotel Corporation of India is wholly owned by Air India. It operates a chain of hotels located at Bombay, Delhi, Srinagar and Rajgar besides flight catering units at Bombay and Delhi. Its financial performance has not been satisfactory. After a gap of 11 years, however, it has tuned the corner and is earning profits since 1994-95. The company hopes to earn profits during Ninth Plan period. Air India will explore the possibilities of dis-investment in the company during Ninth Plan period.

6.10 INDIA'S EXPORT-IMPORT TRADE BY AIR

As stated earlier, air transport has made rapid strides during the last three and a half decades. As of now, almost 25 per cent of the total world trade, in terms of value, moves by air. India's air borne trade has also witnessed a similar trend. The total value of airborne trade (exports and imports taken together) of India has improved from Rs. 13,975 crores in 1988-89 to Rs. 1,01,299 crores in 1998-99, and the percentage share of airborne trade to total foreign trade increased from 28.82% in 1988-89 to 31.88% in 1998-99. Table 6.4 shows the growth in share of foreign trade by air in total foreign trade of India.

The share of exports by air to the total export for the year 1998-99 was about 33% while the share of imports by air to total import during the year under review was 31%. The growth of export by air during the year 1998-99 compared to the preceding year was about 24.2% whereas a growth rate of about 12.63% is seen in the case of total export.

Table 6.4 : Share of Foreign Trade by Air in Total Foreign Trade of India During 1988-89 To 1998-99

(Rupees Lakhs)

Year	Total Export Including Re-Export	Air-brone Export including Re-Export	Percentage Share	Total Import	Air-borne Import	Percentage Share	Percentage share of Air-borne Trade to Total Foreign Trade
1988-89	2030161	810769	39.94	2819365	586746	20.81	28.82
1989-90	2768147	1038347	37.51	3541590	879237	24.83	30.39
1990-91	3255333	1090424	33.49	4319285	834473	19.32	25.43
1991-92	4382803	1410554	32.18	4779738	949806	19.87	25.76
1992-93	5335054	1902775	35.67	9292280	1406784	22.36	28.46
1993-94	6954697	2342053	33.68	7280601	1819084	24.99	29.34
1994-95	8233801	2513100	30.52	8870502	1713006	19.31	24.71
1995-96	10646486	3164138	29.72	12164659	2400237	19.73	24.39
1996-97	11752498	3268169	27.81	13684435	2440317	17.83	22.44
1997-98	12628576	3745668	29.66	15155352	3864764	25.50	27.39
1998-99	14160353	4651421	32.85	17609863	5478447	31.11	31.88

6.10.1 Analysis By Airports

The beginning of air cargo service in India was made in 1975 with the setting up of first Air Cargo Terminal at Kolkata. Subsequently, such Air Cargo Terminals/Complexes have been set up at the Gateway Airports of Delhi, Mumbai, Chennai and Thiruvanantapuram and also at inland airports like Jaipur, Varasasi, Amritsar, Ahmedabad, Bangalore, Madurai,

Hyderabad and Cochim. These air cargo complexe provide requisite infrastructural facilities for air cargo booking, pre-shipment inspection and certification, custom clearance, storate etc., under one roof with single window clearance for export by air. The cargo handled by all airports of India in 1989-90 to 1998-99 is given in Table 6.5. The date given in Table 6.5 clearly shows healthy growth rate in case of both export and imports.

Table 6.5 : Cargo-Handled by Airports of India During 1988-89 To 1998-99

(Gross Weight in .000Kg.)

Year	Exports	% Growth	Import	%Growth	Total Vol. of Trade	%Growth
1988-89	1972.18	14.4	696.49	-13.4	2668.67	5.6
1989-90	2347.45	19.0	935.46	34.3	3282.91	23.0
1990-91	2438.96	3.9	986.64	5.5	3425.64	4.3
1991-92	3419.50	40.2	1048.79	6.3	4468.29	30.43
1992-93	4626.26	35.2	1201.94	12.92	5828.20	30.43
1993-94	5088.32	9.1	823.54	-31.84	5911.86	1.44
1994-95	3082.67	-39.42	918.43	13.95	4021.10	-31.98
1995-96	2825.18	-8.35	1109.75	18.25	3934.92	-2.14
1996-97	3035.84	7.46	1251.97	12.82	4287.81	8.97
1997-98	3401.36	12.4	1456.73	16.35	4858.09	13.30
1998-99	4142.68	21.79	2016.96	38.46	6159.65	26.79

The quantum of cargo hadled by the major airports is presented in Table 6.6. It can be seen from this Table that during the year 1998-99, percentage share of export through Sahar Airport was more than 48%. Whereas the contribution of five major ports viz., Sahar, Meenambakam, IGI, Bangalore, Dum Dum together constituted neraly 98%. In case of IGI

(Palm) the contribution was around 30%. In terms of volume of cargo handled for export by these five major ports the contribution of Sahar Airport was the highest followed much behind by IGI during 1998-99. These two airports covered more than 78% of total export cargo and about 43% of the total import cargo In trm of value of cargo handled, these two airports covered more than 70% of the total exports and about 64% of total imports cargo.

Table 6.6 : Garments Share of Airports in Air-Cargo Handled in Terms of Gross Weight in 1998-99

(Gross Weight in Lakh/Kgs.)

Airports	Exports	% Share	Imports	% Share	Total (Imp. & Exp.)	% Share Vol.
Sahar (S. Cruz)	2001.77	48.32	632.10	31.33	2633.88	42.76
I.G.I. (Palam)	1252.54	30.24	242.45	12.03	1495.00	24.27
Meenambakam (St. Th.Mt.)	472.95	11.42	958.17	47.51	1431.11	23.23
Dum Dum	213.42	5.15	72.08	3.57	285.50	4.64
Bangalore	132.97	3.20	62.63	3.11	195.60	3.18
Cochin	4.95	0.12	7.16	0.35	12.11	0.20
Ahmedabad	9.66	0.23	19.82	0.98	28.48	0.47
Other Ports	54.42	1.32	22.55	1.12	76.97	1.25
TOTAL	**4142.68**	**100.00**	**2016.96**	**100.00**	**6159.65**	**100.00**

6.10.2 Export Cargo Mix

The export cargo mix for movement by air from India comprises perishables like fresh frutis and vegatables, fresh and chilled meat, and garments, textiles, leather goods, handicrafts, gems and jewellery. Of these, two items namely, readymade garments and textiles and perishables together account for 64% of the total value of exports by air. it is further observed that readymade and textiles are the main export item through IGI and Meenambakam airports, while gems and jewellery, leather good and natural silk yarn and fabrics are the main export items through Sahar and Cochin airports. Drugs, pharmaceuticals and fine chemicals are the main items exported through Kolkata, Bangalore and Hyderabad airports respectively. On the other hand, the main import item through Kolkata air port is machinery except electricals and electronic and through Meenambakam airport is electronic goods and through IGI, Ahmedabad and Bangalore airports is gold and silver. In case of Sahar and Cohim Airports, the main items of imports are pearl and precious stones, and gold and silver respectively.

6.10.3 Constraints of Air Cargo

Despite introduction of Open Sky Policy, the problem of air cargo space continues to remain in respect of certain cargos and to certain destination. Procedural delays in cargo clearance and inadequate handling facilities at some of the terminals are other hurdles in the smooth movement of exports. The shippers invariably face problems in timely shipment due to mounting backlogs at terminals, especially during peak periods (January to July). Main reason for this is the directional imbalance in the export and import cargoes at certain terminals.

6.10.4 Air Cargo Tariff

Air cargo tariffs containing the rates, rules and procedures are published in the publication called TACT (The Air Cargo Tariff). It is jointly issued by the airlines in three volumes; Volume I containing the general rules, regulations and procedures, and Volumes II and III containing the freight rates. The rates have to be filed with and approved by the respective governments whose scheduled airlines are members of IATA.

Freight charges are usually for one kg. and fractions are rounded off to the next ½ kg. In volumetric terms, one kg. is equal to 366 cubic inches or 6,000 cubic cms. Consignments of volume weith ½ kg are charged at the rate of 3,000 cubic cms. International air cargo rates differ from airport to airport and do not include surface transport, and trans-shipment charges.

The rate structuring depends on the amount of traffic, competition, types and quantities of commodities, value of commoditv and special handling requirements involved.

There are vaious types of freight rates such as General Cargo Rates (GCR), Minimum Charges, Specific Commodity Rates (SCR), Class Rates, Freight All Kinds (FAK) Rates, Container Rates, Unit Devices (ULD), Deferred Cargo Rates, Unified Cargo Rates, Group Rates and Charter Rates.

6.11 PRIVATISATION

In every region of the world, all countries depend on the aviation industry to fuel their economic growth and their financial strength. In 1989 the industry provided at least 21 million jobs for the world's workforce and US$700 billion in annual gross output. Privatisation has pushed along by laisez-faire economic doctrines prevalent among many governments and also because of the immediate need to cut public spending.

Many governments, while retaining state-ownership of the national airline, re-organised it to act as a private company and to operate in a commercial competitive environment. European airlines such as Air France and Lufthansa, though still majority state-owned, are increasingly required to operate to commercial rather than public service criteria. Many state-owned airlines have substantially reduced the level of government ownership and are allowing private investment. Around 40 airlines around the world are currently up for privatisation.

The Indian Scene

In India, is was in April 1990 that the government had allowed private air taxi operators on non scheduled routes/chartered flight with 30 seater capacity which was later revised to 50 seaters. To meet the growing passenger demand, the domestic air transport industry was demonopolised in 1994 by repeal of the Air Corporations Act, 1953 and private operators were allowed to run scheduled flights.

A new policy for private investment in the domestic air transport services sector was announced in April, 1997 allowing for 100 per cent NRIOCB equity and 40 per cent foreign equity participation in domestic airlines. However, equity participation by foreign airlines, directly or indirectly, has not been permitted. Under the new policy, an airline owned and controlled by any Indian national would have the right of free entry and choice of aircraft, or indirectly, has not been permitted. Under the new policy, an airline owned and controlled by any Indian national would have the right of free entry and choice of aircraft, type and size. Although all private airlines are allowed growth in capacity, which is pre-determined on the basis of traffic growth, first preference would be given to Indian Airlines. At the same time, total capacity of any private operator should not exceed 20 per cent of the aviation market. Besides, the existing route dispersal guidelines with respect to categories I, II and III pertaining to trunk routes, feeder routes and social sectors will be applicable to private airlines. In addition, the policy calls for strengthening the role of Indian Airlines as the premier domestic carrier which pre-empts competition from joint ventures.

A separate comprehensive policy on Airport infrastructure was also formulated in December. The Goverrnment has recognized the need for the participation of private parties (including foreign ones) both for reasons of bridging the gap in resources as also to bring in greater efficiency in management of airports. In the case of high-cost projects involving international hubs, Government may seek international or bilateral cooperation, the actual implementation of the project would be entrusted to consortia interested in turnkey execution on joint venture basis. Foreign equity participation in such ventures may be permitted upto 74 per cent with automatic approvals, and upto 100 per cent with special permissions. Restructuring of some of the airports is to take place through long term leasing route.

Aviation is highly capital intensive sector. But, the conditions have not been made conducive for private operators. Of the seven scheduled private operators, Modiluft's financial arrangement with Lufthansa soured and East West burnt itself out because of its connections with an underworld don. Those which remained in the field concentrated and over expanded on trunk routes, made inroads into Indian Airlines market share on these routes and, in the process, reduced the capacity of the national carrier to subsidise the operations on the other routes including those in backward and isolated areas. Led by over enthusiasm, these new entrants operated without adequate trained personnel and experience, sustained on the poached highly skilled manpower trained by the Indian Airlines and benefitted by the route network developed by the national carrier during the last four decades. However, unhealthy business practices and the tendency to offer more frills to passengers brought the financial crisis of some of the new entrants. Since most aircraft in the private sector are taken on lease, the high lease charges and the ageing, fuel guzzling aircraft leased out mostly by other developing countries add to the woes of the private operators most of whom lack the expertise to run an airline. Added to this, are the Airports Authority of India charges for landing, parking and navigation which increase operating costs of the private airlines. Right now, there are only two scheduled private airlines providing regular domestic air services and there are 41 non-scheduled operators aviation and air transport services catering to 41.4% of the domestic air traffic.

Private investors are not interested in responsibilities which affect their profits adversely. As Ulli Bauer of SH&E, a consultancy company which advises governments on airline privatistion, notes that: 'State-owned airlines are subject to considerable economic head wind that private investors hope to elude. These handicaps range from having to serve destinations for political instead of commecial reasons to obligations in performing essential air services or cross subsidising money losing markets'. Privatisation, in combination with deregulation, detaches an airline from overall government economic or transport planning. It sheds the public service responsibilities of an airline and its air services. It also effectively gets rid of any form of public accountability and democratic control.

All said and done, despite imposition of certain conditions to give a level playing field to Indian Airlines, it is no longer the master of the Indian skies. It has lost 40 per cent of its market share and a large chunk of its trained commanders since the entry of private air operators in Indian skies.

Check Your Progress B

1 Name the organisations other than AAI which help in regulation and smooth functioning of air services in India

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2 What are the facilities provided by air cargo complexes for handling the export cargo?

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3 State which of the following statements are True or False.

i) Readymade garments and textiles and perishables taken together account for 64% of the total value of export cargo.

ii) Hotel Corporation of India has been promoted by Welcome Group of Hotels.

iii) The key to improving the financial performance of Air India lies in maximising yields and increasing the profit margins.

iv) The Indian Airlines has targeted a market share of about 70% in the Ninth Plan.

v) A new policy for private investment in domestic air transport was announced in April 1997 allowing for 100% NRI/OCB equity.

vi) At present there are only two sheduled/private airlines providing regular domestic air service.

6.12 PROBLEMS AND PROSPECTS

The country's domestic and national carriers have not yet been able to take full advantage of the open skies policy and a 12.5 per cent projected annual growth in air traffic. The report of the sub-gruop to assess the growth in passenger and cargo traffic and capacity requirements during the Ninth Plan had indicated the expected passengers traffic during 1997-98 to be 16.02 million. However, in view of the actual carriage for the previous year, the figure had been scaled down to 13.2 million. The slow growth of domestic air traffic is attributed to the fact that IA did not expand its fleet as projected. On the contrary, it added to capacity on its international routes with existing fleet. Secondly, only 10 aircrafts were inducted by private airlines during 1996 against 11 withdrawn from the market by non-operational airlines. Thirdly, there were restrictions on private operators on induction of bigger aircraft due to infrastructural constraints. It may be noted that smaller aircraft need higher load factor and higher air fare to become economically viable.

The IA slipped into the red after the grounding of A 320s following the Aurangabad air crash. In 1996-97, it suffered a loss of Rs. 40.75 crore and it was only in 1997-98 it had a turnaround and started earning. Air India was a profit earning company till 1994-95. In 1995-96, it suffered a loss of Rs. 244.06 crores and in 1996-97, another Rs. 181 crores in 1997-98 and reported a loss of 174 crores in 1998-99. Both carriers suffered loss of revenue and image due to lack of full capacity utilisation, ageing fleet and intensive labour problem. IA has a fleet of 53 and AI 26 aircraft. The two with their massive manpower and multicipilicity of unions, have had to suffer huge losses in man hours and capacity utilisation. Both have now gone in for 'productivity-linked' agreements with different unions. As a result, the pilots salaries have zoomed from Rs. 30,000 odd per month ot up to Rs. 3 Lakh. This was a knee-jerk move by the management to stem the large-scale exodus of IA pilots to private airlines in the domestic sector. IA fares have kept on increasing from year to year. With privatisation, there was a move to merge AI and IA, but with their manpower of 22,000 and 35,000 respectively, synergy is still a far away dream. Though there is under-utilisation of cargo space, no measures are being taken to promote cargo traffic except sparing it from additional hike in rates and giving some concessions to selected commodities.

Expense ratios indicate the fuel and oil expenses snatched away a major part of operating revenue followed by staff salaries, depreciation and maintenance expenses. Yield to cost ratio, which is a good yardstic for comparing different air carriers is fairly satisfactory and it corresponded to net profit to operating ratio. A wide variations is noticed between profitability ratio and the ratio of net profit to capital employed which speaks of the growing level of non-operating expenses. While the fixed assets turnover rate is very low, the working capital turnover rate is high. Investment turnover rate stood fairly small, but showed an upward trend which is due to the introduction and intensive use of modern aircraft.

While AI and IA are getting their act together and slowly waking up to the competition in the skies, time is running out. Already five airlines (Lufthansa, United Airlines, Air Canada, Thai and Scandinavian Air Service) have formed a commercial Star Alliance. British Airways has gone in for a complete image change and has had a tie-up with United Airlines and Qanta's. The way to enhance the market is by forming alliances and moving away from bilaterals to multilaterals. Air India has also formed an alliance with Air France, which was in the red till recently. However, its negotiations with British Airways, Air Canada and Singapore Airlines did not take off.

6.12.1 Crisis of Safety

In the last few years a string of aviation disasters had led to an unprecedented crisis of public confidence in aviation safety. For the first time there have been mass refusal by passengers to board individual flights because of concerns about safety. Moreover, the public and the media are making a direct link between deregulation and safety. The airline industry argues vigorously that safety is never compromised by commercial considerations. The reality of course is that safety involves significant operational costs, including the thoroughness and efficiency of maintenance checks, the age of aircraft, the training level of employees, the working hours and fatigue levels of both groundstaff and air crew. All of these come under fierce pressure in a climate of competition.

Not only have governments failed to provide national aviation authorities with the extra monitoring resources required, they have begun to lower the standards themselves. Those which set higher safety standards are seen as putting their airlines at a competitive disadvantage.

6.12.2 Policy Framework and Programmes for the Ninth Plan

During the Ninth Plan (1997-2002), the objective in respect of the domestic air transport operation would be to provide adequate capacity, ensure healthy competition between the private and the public sector as also safe and reliable operations. Several significant developments took place in the field of civil aviation during the Eight Plan period. With the repeal of the Air Corporation Act, 1953 in 1994, the monopoly of Indian Airlines, Air India and Vayudoot over scheduled air transport services ended. Consequently, 6 private operators, who were hitherto operating as air taxis, were granted the status of scheduled airlines. During Eighth Plan, 7 scheduled operators and 19 air taxi operators have been given permits for operation of domestic air transport services in India. With the enactment of the Airports Authority Act, 1994, the two airports authorities viz., the International Airports Authority of India (IAAI) and the National Airports Authority (NAA) were merged w.e.f. 1.4.1995 to form a single unified body, viz., the Airports Authority of India (AAI). Vayudoot Limited was merged with Indian Airlines Limited w.e.f. 25th May, 1993.Against the planned outlay of Rs. 3,998 crore a sum of Rs. 7,334.11 crore (Provisional) was spent during the Eighth Plan. The bulk of the outlay (98.8%) was financed from Internal and Extra Budgetary Resources. (IEBR). The plans of Air India, Indian Airlines, Pawan Hans and Hotel Corporation of India were entirely financed from their IEBR.

In the domestic airtransport operation, the objective would be to provide adequate capacity, ensure healthy competition between the private and the public sectors as also safe and reliable operations. To achieve this objective, the private sector would be encouraged to provide air service and at the same time, it would be ensured that only the technical and financially sound players enter the field. In this regard, transparent norms would be worked out and regulatory mechanism strengthened with a view to promoting a healthy competition amongst the airlines and protecting the interest of the users.

The national carrier still plays an important role in the provision of air services in the country. One of the policy objectives for the development of civil aviation in the Ninth Plan would be to create a proper environment to enable the national carrier to operate to full capacity and bear the social burden which it is required to carry and, in the process, ensuring that the country gets adequate return for investment made in developing infrastructure, in training highly skilled manpower and in acquisition of the sophisticated and costly array of equipments and instruments.

The bulk of the capacity of both the Indian Airlines and the private operators is deployed on trunk routes carrying heavy traffic. The region routes, particularly, in isolated and backward areas are characterised by shorthaul operation, un-economic load factor, high cost of operation and low revenue yield. The operations on these routes are usually unviable. In order to ensure that the scheduled operators provide air services on these routes, Route Dispersal Guidelines were issued. Under these guidelines, scheduled operators operating on specific trunk routes are required to deploy a part of their capacity on regional routes including services on routes serving remote and backward areas is borne by the Indian Airlines. It is necessary that the financial losses of providing air services on these routes are shared equitably by all operators. it is equally important to ensure that remote areas are provided with reliable air services. To meet these objectives, a more transparent and enforceable mechanism for cross subsidising these routes from the surplus generated by operation on trunk routes will be evolved.

International air services are governed by bilateral agreements. The general objective of India's bilateral civil aviation relations will be to provide adequate capacity to facilitate easy moment of international traffic to/from India. But in doing so, as balance will be struck between the interests of the national carriers on the one hand, and promotion of trade, commerce and tourism and convenience of passengers on the other. A more liberal approach will be adopted while negotiating the opening up of new routes, under-served routes and routes providing connection to neighbouring countries.

The future development/upgradation of airports in the country will be undertaken on the basis of the role they are expected to play in handling the air traffic. Master Plans for the development of international, national and regional hubs shall be prepared and upgradation/modernisation taken up accordingly. Private sector investment will be encouraged in the construction of new airports from greenfield level and legal framework will be created for private/joint participation in the airlines and airport development projects

Facilities for maintenance of aircrafts of domestic/foreign airlines will be developed and training of foreing pilots will be encouraged so as to promote regional cooperation and enhance foreign exchange earnings.

6.13 LET US SUM UP

Air transport plays a significant role in movement of cargo by virtue of its advantage of speed. As of now, about 25% of the total world trade moves by this mode of transport and the share of airborne trade to total foreign trade was 31.88%.

The civil aviation in India is structured into three distinct financial entities-operational, infrastructural and regulatory. Indian Airlines (IA) and a few private airlines provide domestic air services and Air India (AI) provides international services. Apart from these two, there is Pawan Hans Helicopters Limited which provides helicopter services to oil sectors and certain state government and publis sector undertaking (PSUs) and North Eastern States. The infrastructural facilities are provided by Airports Authority of India (AAI). The Directorate of Civil Aviation (DGCA) acts as the regulatory body for enforcing civil air regulations. In addition, there are certain auxiliary organisations such as Bureau of Civil Aviation Security (BCAS) which is responsible for ensuring adequate security arrangements at the airports, India Gandhi Rashtriya Uran Academy (IGRUA) which provide training for commercial pilots, and Hotel Corporation of India which operates a chain of hotels and also provide flight catering services.

Air transport in India has made rapid strides during the last three and a half decades. The value of airborne trade (exports and imports taken together) was of the order of Rs. 1,01,299 crores in 1998-99. Airport-wise analysis shows that the two major airports, Sahar (Mumbai) and IGI (Delhi), covered more than 78% of the total export cargo and about 43% of the total import cargo.

The export cargo mix of movement by air from India comprises perishables, textiles, leather goods, handicraft, and gems and jewellery, cereals. Of these, two items namely, textiles and perishables taken together account for about 64% of the total value of exports by air. In order to help Indian exporters and make their exports more competitive, the Government had introduced in April, 1990 an 'Open Sky Policy' for cargo and permitted market forces to determine cargo tariffs with IATA rates as the floor rates. Despite such policies, the problem of air cargo still space continues in respect of certain cargoes and certain destinations.

The Government of India recognised the need for the participation of private parties in domestic air transport and has taken up certain policy initiatives in this direction. These include open sky policy, preferential treatment to forein airlines for additional pas-cum cargo flights on terminal basis and favourable consideration to private operators and association of exporters to undertake cargo operations on their own. Apart from these, a new policy for private investment in the domestic air transport service sector was announced in April 1997. A separate comprehensive policy on Airport infrastructure was also formulated in December. Somehow, the country's domestic and natural carriers have not been able to take full advantage of the open sky policy and the projected annual growth in air traffic.

The slow growth in passenger and cargo traffic can be attributed to a veriety of factors such as non-expansion of fleet, agency fleet, intense labour problems, high cost of operations, low revenue yield on regional routes, under utilisation of cargo space, security problems, uneconomic load factor, procedural delays in cargo clearance and inadequate handling facilities at some of the terminals, and other hurdles in smooth movement of exports.

Several significant developments took place in the field of civil aviation during the Eighth Plan period. The Ninth Plan provides for creating adequate capacity, encouraging helthy competition between the private sector and public sector as also safe and reliable operations. One of the policy objectives of the development of civil aviation in Ninth Plan would be to create proper environment to enable national carriers to operate to full capacity and ensure adequate return on investment.

An effort also sill be made to develop/upgrade the airports in the country and provide necessary facilities for maintenance of aircrafts of domestic/foreign airlines encouraging at the same time, private investment in such activities.

6.14 KEY WORDS

Air Cargo Complex: Air cargo terminal providing requisite infrastructural facilities for air cargo booking, preshipment inspection and certification, custom clearance, storage, etc., under one roof.

Air Cargo Tariff : Air freight rates and the rules and procedures for determination of these rates.

Gateway Airports : International airports like Delhi, Calcutta, Mumbai, Chennai and Thiruvananthapuram.

Hinterland Airports: Inland airports like Jaipur, Varanasi, Amritsar, Ahmedabad, Bangalore, Madurai, Hyderabad and Cochin.

Investment Turnover: Ratio of Sales to Capital employed.

Open Sky Policy : Policy allowing provision of air services by private operators.

Statutory Corporaton : A corporation established by special Act of Parliament.

6.15 ANSWERS TO CHECK YOUR PROGRESS

A 3	(i) 25	(ii) 31.88	(iii)	three	(iv)	support, connect	(v)	AAI
B 3	(i) True	(ii) False	(iii)	True	(iv)	False	(v) True	(vi) True

6.16 TERMINAL QUESTIONS

1 Describe the role of air transport in movement of cargo in overseas trade of India.

2 Outline the structure of civil aviation in India and discuss the role of AAI and DGCA in the functioning of air services in India.

3 Describe the working of Air India and Indian Airlines and state the impact of allowing private operators on their functioning.

4 What are the problems faced by air transport in India and how far the policy framework and programmes envisaged for the Ninth Plan could help in improving the air services.

5 Analyse the role of major airports in India in handling overseas cargo, and state the constraints faced by them.

6 Write explanatory notes on any three of the following:

a) Significance of air transport

b) Pawan Hans Helicopters Limited

c) Air cargo tariff

d) IGRUA

e) BCAS