CHAPTER –V.

Air Transport

Humainty's desire to fly possibly first found expression in China, where human flight ties to kites is recorded (as a punishment) from the sixth century A.D.

The first generally recognized human flight took place in Paris in 1783. Jean Francois Pilatre de Rozier and Francois Laurent d Arlandes went 5 miles (8 km) in a hot air balloon invented by the Montgolfier brothers.

Another notable advance was made in 1884, when the first fully controllable free-flight was made in a French Army electric-powered airship . La france , by Charles Renard and Arthur Krebs.

The first aircrafts to make routine controlled flights were non-rigid airships (later called 'blimps". The most successful early pioneer of this type of aircraft was the Brazilian Alberto Santos-Dumont.

The Wrights made the first sustained, controlled and powered heavier-than-air flight at Kill Devil Hills. North Carolina, a town five miles down the road from Kitty Hawk, North Carolina on December 17, 1903

In 1877 Enrico Forlanini developed an early unmanned helicopter powered by a steam engine.

The first manned helicopter known to have risen off the ground was made in 1907 (Cornu France) though the first practical helicopter was the Focke FA-61(Germany), 1936

The first seaplane was invented in March 1970 in France.

Aircraft evolved from being constructed of mostly wood and canvas to being constructed almost entirely of aluminum. Engine development proceeded apace, with engines moving from -in-line water cooled gasoline engines to

rotary and radial air coolded engines, with a commensurate increase in propulsive power.

World War II saw a drastic increase in the pace of aircraft development and production. All countries involved in the war stepped up development and production of aircraft and flight based weapon delivery systems.

World War II saw a number of technological advances that were remarkable for its day: The first functional jet plane was the Heinkel He 178 (Germany), flown by Erich Warsitz in 1939.

Commercial Aviation took hold after World War II using mostly ex-military aircraft in business of transporting people and goods.

Even with the end of World War II, there was still a need for advancement in aircraft and rocket technology.

In the beginning of the 21 century, subsonic aviation focused on eliminating the pilot in favor of remotely operated or completely autonomous vehicles. Several Unmanned aerial vehicles or UAVs have been developed.

In commercial aviation, the early 21 st century saw the end of an era with the retirement of Concorde. Concorde also was fuel hungry and could carry a limited amount of passengers due to its highly streamlined design Nevertheless, it seems to have made a significant operating profit for British airways.
Despite the setback and the general slowing of progress, it is generally agreed that the 21 st century will be bright one for aviation. Planes and rockets offer unique capabilities in terms of speed and carrying capacity that should not be underestimated. As long as there is a need for people to get to places quickly there will be a need for aviation.

Air travel has changed the face of transport completely, especially in the field of internal and international traveling. Air transport has brought about

the democratization of travel enabling millions of people to go or move on business. This mass movement of people all over the world is made by the means of aviation. Airlines followed and the technological changes in the transportation industry made it possible to carry hundreds of people over the oceans in a few hours which was well within the reach of the middle class in Europe and North America.

The geographical situation of India was favorable for the development of air transport internationally and internally. India has developed her air transport after 1953. There is a considerable scope of civil aviation in India throughout the year due to good flying condition having vast distance to develop domestic air lines.

The growth of civil aviation in India is a recent phenomenon, the quickest mode of transport. Scheduled air transport started in India in 1932. Its existence was only symbolic and played relatively small role in economy of the country during the British rule. The British Government had never taken any special efforts to develop it because unlike railway, its use to them was limited and technological level of this industry was inadequate.

Like railways, air transport also came into existence once during the British rule, which tremendously revolutionized and modernized the means of transport. In India it was begun when Joseph Lynn made a balloon flight from Lal-baug garden in Bombay and landed at Dadar, Bombay in 1877. In 1889 Perceval Spencer made a demonstration flight at Calcutta[-1]. In 1911 the Government of India started post and telegraph service by inaugurating post and telegraph department for air service between Allahabad to Nainital.

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1. Smith D.E., Indian Airways p.81

It can be said that the first official efforts were made by the Government of India which led to the beginning of civil aviation and communication by airways.

The World War I period gave considerable impetus to civil aviation. In 1927 civil Aviation Department was set up. And civil aerodromes were established and flying clubs, schools were founded at the different parts of the country. After 1931 Indian capital began to participate in domestic airlines and international airways. In the period before World War II and after it, air transport developed.[2]

The objectives of the Government of India, after developing air transport were strategic. New branch of defence i.e. air force was demand of period when air transport made tremendous progress in Europe. Army, Navy and Air Force had become essential part of military for internal and international security of the empire. In India there were 564 Indian states, so the British Government was forced to make a policy of establishing a uniform system of air navigation including the territory of the British India and that of the princely states.[3]

The Chamber of Princes was set up by the crown by a Royal proclamation on the 8th February 1921 It was consultative and not an executive body, consisting of representations of different classes of states with viceroy as its president and a chancellor and a pro- chancellor elected annually from among the members. The viceroy could consult the standing committee of the Chamber of the Princes freely in matters related to territories generation and on those problem which concerned British India and states in common. [4]

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2. H.P.O.file (Air Navigation) No. 1 On Air Navigation in Indian States P.15.
3. Ibid P. 26.29
4. Lee-Warner, The Native States of India, P.120

On 25th October 1929, at the meeting of Chamber of Princes, the standing committee prepared certain provisions to make a structure of regulating air navigation in whole of India including the territories of the Indian States. The motive of the Government of India was to establish uniform system in the field of air navigation. The rulers of the states should follow the regulation on the lines of British Indian legislation. As in regards with the railways that the rulers of the states could not construct broad gauge line in their territories by them, they could construct only the metre gauge or narrow gauge lines while broad gauge lines were constructed by the Government of India only. At the same, way the Civil aviation was also regulated by the British Government. The control over the foreign relations of the Indian states was exercised by the Government of India and it was the duty of the Government of India in order to fulfil its international and strategic obligation to accept the responsibility for the regulation of air navigation in the Indian State. Moreover, in exercise of the responsibility of the paramount power for the external and internal security of India, it was admitted that its service aircrafts were free to fly over and land in the territories of the Indian States without prohibition as regards areas. The Government of India was responsible for the defence and security of India as a whole in order to develop its strength of air force which would be in time of emergency fly over the areas of the states. [5]

In 1929 the provisions were made in Air convention between the Government of India and the rulers of the Indian states in which the Government of India cleared its intention of regulating the air transport was to secure the safety of the general public travelling by air. The jurisdictional rights were retained by the British Government and in Regulation of the air navigation over the Indian State was the fulfillment of international obligation arising out of Air convention.

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5. From the Provisions discussed by the standing committee of the Chamber of Princes at their meeting held on the 25th October 1929. H.P.O. file No.1 P.26, 29 (Air Navigation)

Like railways, the Government of India had full jurisdiction over air navigation even in the States. The rulers of the States had to provide site for the establishment of aerodromes or emergency landing ground necessary for the development of air navigation in India.

The technological management required for the efficient functioning of the aerodromes or emergency land ground should be entrusted to the Civil Aviation Authorities of the Paramount power i.e. the government of India who had assured the liability of safety and security through its service air craft known as Royal Air Force. Royal Air Force could fly over the lands of states which were the main objectives behind the development of India. [6]

Indian States were free to construct aerodromes and establish landing grounds within their territories. They could invite the Agency of the Government of India's Civil Aviation Department to construct the aerodromes. The Indian states could reserve aircraft carriage of persons and goods. But they had to seek sanction of the Government of India before doing so. [7]

The Indian states had to enact and enforce legislation on the line of the British Indian legislation with regard to air transport. The regulation of aerial navigation in India was considered to be a single state. A complete record of all registered air-craft was maintained by the international commission for air – navigation through which a central register was prepared.

To ensure the safely of people traveling by air, licenses of aircraft personels like pilots, engineers, navigators were considered essential. The Civil Aviation Authorities of Government of India was empowered to regulate the whole task of administration of air transport and it was to do through the residents at the courts of Indian states. The central controlling and co-ordinating authority for the whole of India established a uniform system.

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6. H.P.O File No.6 Air Navigation in Indian State P. 5
7. Ibid

The task of inspection of aerodromes was made to maintain uniform standards fixed by the Government of India. The Director of the Civil Aviation of India was authorized for issuing of certificate of airworthiness for flying outside the limit of the state i.e. British India.

Baroda's Government was eager to take advantage of air transport and communication in the state. In 1927, the Civil Aviation Department was set-up and the Government of India allowed the rulers of Indian states to develop air service. The Government of India invited Baroda Government to narrate their views on the provisions included in Air convention. [8]

Baroda Government requested the Government of India to make certain arrangement with regards to civil aviation. There were considerable increase of air service by various air service companies like Air Service of India, Tatason's Airways, National Airways etc. that worked for air mail service and transport of passengers. [9]

Baroda Government proposed to make special arrangement for the custom clearance of dutiable articles arriving at the aerodromes from the foreign ports on which duty at the British India tariff rates had not been levied in India. [10]

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8. H.P.O. File No. 8- P -12.
9. Letter No. NML 1787-P of dt. 2-11-1931 V. T. Krishnamachari to the Government of India H.P.O file No. 2
10. H.P.O. File No. 6. P.41

The territories of the Baroda State were very scattered and communication between the capital i.e. Baroda and outlying districts of Navsari, Kadi and especially Amreli in Kathiawad was extremely difficult.[11].

There were possibilities therefore, for the internal development which would greatly facilitate administration as well as commerce, the immediate development being the rapid transport of officials which would afford a considerable saving in time as well as bring about much closer co-operation between the capital and outlying territories of the state, the air transport considered to be the quickest mode of transport. It is true that there was considerable development of railways and good road system in the state by 1932. In particular it might be mentioned that the journey between Dwarka or port Okha which took approximately 24 hours by train, could be covered in 2 hours by air, the quickest and time-saving means of travel.[12]

After 1931 there was considerable increase in participation of the Indian capital in air service. In 1932 the first internal air service was stared by the Tata Airways between Karachi and Madras via Bombay. At the same time Indian National Airways (Emperial Airways London) and Air service of India came into existence and played an important role in the development of civil aviation and air mail service in India.

The development of air transport in the Baroda state was to take more time as it was not a ripe time for internal state service and the use of air craft for the transport of officials. It was put into effect with considerable benefit and Baroda itself could be the focus of a general service such as was being contemplated by certain operating companies between Bombay and various places in Kathiawad.

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11. V.T. Krishnamachari, Letter Dated 15-8-1932, H.P.O. File No. 2

12. H.P.O. file No. 5 P.140

The Air service of India Limited had opened air service from Bombay to Kathiawad. Thus, Baroda Kathiawad air service between Baroda and Baroda state possession in Kathiawad i.e. Amreli and Okha for the convenience of the passengers, desired to run regular, scheduled flight bi-weekly with a four seated plane. It was advantageous for the officers of the Baroda state Government touring on duty in state's possessions in Kathiawad and there was no service yet in Kathiawad from foreign countries .[13]

It was desired to construct an aerodrome of permanent nature for the purpose of storing petroleum stocks, equipments and accessories necessary for the refuelling of air-craft. [-14.] The Director of Commerce and Industry and labour of the state and the Air Service of India pointed out the importance of Okha as landing ground or a site near it being selected as landing ground in the view of the development of air travel and transport of packages by air. [-15.]

Air Service of India was prepared to do all it could to develop any scheme put forward by the Baroda Government regarding air transport in Kathiawad. [-16].

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13. H.P.O File No, 3 P.233

14. Ibid. P. 234

15. H.P.O. File No. 1 P.235

16. Ibid P.240

Baroda Government suggested the Imperial Airways through Turnbull Gibson Company for shifting the center of Air Service from Karachi to Okha and suggested for opening a new centre at Okha for direct service to Ahmedabad Bombay onward.

Imperial Airways was interested in developing a flying boat type of machine not directly interested in inland routes. Imperial Airways would operate a service of flying boats between Bombay and Karachi and Okha would serve as refueling station of service. Karachi, Ahmedabad, Allahbad and Jodhpur were the base of foreign plane service and [17] Okha would be out of the line unless the center of air service was shifted from Karachi to Okha or a new center could be made. However, Okha could be a good base for Sea plans with its well-protected harbour. [18]

Okha was a possible intermediate station for refueling for Karachi-Bombay air service and connected land service with Kathiawad. So, arrangement for refueling flying clubs as well as air planes and location of an aerodrome at a suitable place near Okha, was within half-mile distance and a road near the landing area. All facilities, workshop, taxies, rail, transport, telegraph office, electric power supply, water supply, petrol and oil and rest house, hospitals and police were available. Trunk telegraph, wireless station might be installed in near future. [19]

Air Service proposed the extension of a passenger service to Chalthan, Navsari and Amreli Chital to Baroda and six times a week service between Bombay and Kathiawad for the purpose of landing and taking on passengers. The company expected a subsidy of Rs. 10,000 a year for the first five years of service from the Baroda Government. [20]

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17. H.P.O File NO. 1 P. 58
18. Letter of Air Service of India dated 9-6-1933 H.P.O. file No. 1 P. 247
19. Letter dated 19-6-36 from Vinetecent of Tata Airways to Baroda Government H.P.O. file No. 1 P.265
20. H.P.O. file NO. I. 267

Air Service of India was to operate air service between Baroda, Ahmedabad, Okha twice in a week during fair-weather 8 months a year except monsoon with 35 steamers planes.

There was a considerable demand for training in flying club in Gujarat and Kathiawad to train pilots and ground engineers in the western part of country. -[21]

Air service of India was to start a flying school at Baroda and provide their own aeroplanes and spare parts. The present ground Engineers' school at Juhu, Bombay was proposed to be transferred to Baroda from education point of view. Baroda was practical on the normal flying routes of Air Service of India Limited from Bombay to Jodhpur. -[22] Touching Chalthan, Navsari would enable travellers in the Tapti valley Railway section to fly to Kathiawad and provide them a view of quick means of communication over the most cicruitous point of their journey. -[23]

Three feeder services was to operate to connect Baroda with Amreli Via Bhavnagar from where Baroda would be connected with Okha Via Jamnagar and Bombay. It was commenced in October 1939. Baroda Government was to pay subsidy of Rs. 20,000/- per year. The company was to receive free landing and housing facilities at state aerodrome for air craft operating for service.

Baroda Government was to introduce state excise and custom after the examination of luggage of the passengers arriving at Amreli and Baroda by the airoplanes of the Air service and to levy duty on the dutiable articles of foreign origin on which no duty might have been paid. Statement of duty recovered was to be sent to the collector of salt revenue.

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21. H.P.O. file No. 1 P. 327
22. Air Service of India's Correspondence dated 31-3-1937 to the Diwan H.P.O. File No.1 P.317
23. H.P.O. file No. 1 P. 321

The list of the members of His Highness family and the important offices of the Government was sent to the Resident of Baroda in context of traveling by air in Kathiawad.

Baroda Government agreed to grant air service to enable the company to link Baroda with Kathiawad air service. The Air Service of India was to be subjected to all provisions of the Indian Air Craft Act as applied to Baroda and any rules and regulations made or to be made there under. There was an agreement between the Baroda State and Air Service of India with regards to Baroda - Kathiawad air service. The agreement was signed on September 15, 1939. [24]

Air service of India Limited had come to an arrangement with the Postal Department, Government of India, for carriage of surcharge mails (posts) between Baroda and Amreli Via Bhavnagar and back. The service was commenced on May 3, 1940 from Baroda to Amreli and Amreli to Baroda. -The air service to Amreli was to go upto Bhavnagar until the aerodrome at Amreli got ready. [25]

Baroda Government had given the joy-ride demonstration on the payment of useful fees which were same as at civil Aerodrome of the Government of India. The members of Royal family were taking keen interest in the progress of Air service India with kind consideration and necessary patronage in joy riding and charter flights. [26] Air Service of India Limited had first class 3 to 8 steamers, well furnished, luxurious in aircraft, always ready to give joy rides, charter flights to royal family of the native states, officer and general public. [27]

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24. H. P.O File No.1 319 dated 15-9-1939
25. From H.P.O. Manager to the Director Indian Aviation Department company ltd. Bombay dated 21-10-1937 H.P.O. file No. 1 P. 195
26. H.P.O. file No. 1 P. 14
27. Ibid

Schedule of Fares:

1. Baroda - Bhavnagar	Rs. 15-0-0
2. Bhavnagar - Amreli	Rs. 10-0-0
3. Baroda - Amreli	Rs. 25-0-0
4. Baroda - Okha	Rs. 35-0-0
5. Baroda - Bombay, via Bhavnagar	Rs. 45-0-0

All fares mentioned above were subject to 20% reduction on return half ticket, as per usual air transport rules.

All state officials were allowed an extra 10% reduction on all routes.

Air Service India Limited, Baroda, Kathiawad Air Services.

AIR SERVICES OF INDIA LTD.

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BOMBAY - KATHIAWAR

Mondays, Wednesday, Thursday and Fridays.

Air Ports		Time	Air Ports		Time
Bombay	Departure	7 - 45	Porbandar	Dep.	7- 15
Bhavnagar	Arrival	9 - 15	Jamnagar	Arr.	7-45
"	Departure	9 -45	"	Dep.	7-55
Rajkot	Arrival	10-35	Rajkot	Arr.	8-20
"	Departure	10-45	"	Dept	8-30
Jamnagar	Arrival	11-10	Bhavnagar	Arr.	9-20
"	Departure	11-20	"	Dept	10-00
Porbandar	Arrival	11-50	Bombay	Arr.	11-30

Time table for the Days when the Planes Touch Okha

Tuesday and Saturday

Air Ports		Time	Air Ports		Time
Bombay	Departure	7-45	Porbandar	Dep.	6-35
Bhavnagar	Arrival	9-15	Mithapur	Arr.	7-05
"	Departure	9-45	"	Dept	7-15
Rajkot	Arrival	10-35	Jamnagar	Arr.	7-45
"	Departure	10-45	"	Dept	7-55
Jamnagar	Arrival	11-10	Rajkot	Arr.	8-20
"	Departure	11-20	"	Dept	8-30
Mithapur	Arrival	11-50	Bhavnagar	Arr.	9-20
"	Departure	12-00	"	Dept	10-00
Porbandar	Arrival	12-30	Bombay	Arr.	11-30

JAMNAGAR - BHUJ

Mondays, Wednesdays Tuesdays,
Thursdays
& Fridays & Saturdays

Air Ports		Time	Air Ports		Time
Jamnagar	Dep.	11-25	Bhij	Dep.	7-00
Bhuj	Arr.	12-00	Jamnagar	Arr.	7-35

BARODA-BHAVNAGAR-AMRELI

Tuesdays & Saturdays

Air Ports		Time	Air Ports		Time
Baroda	Dep.	6-45	Amreli	Dep.	8-40
Bhavnagar	Arr.	7-35	Bhavnagar	Arr.	9-25
"	Dep.	7-50	"	Dep.	9-45
Amreli	Arr.	8-30	Baroda	Arr.	10-35

Single Fare in Rupees (Per Passenger)

Air ports	Bhavnagar	Rajkot	Jamnagar	Okha	Porbandar	Bhuj	Baroda
Bombay	40	42	47	50	50	65	45
Bhavnagar	-----	10	15	20	20	30	15

Rajkot	-----	----	10	15	15	25	25
Jamnagar	-----	----	----	10	10	20	30
Okha	-----	----	----	----	10	25	35
Porbandar	----	----	----	----	----	25	35
Bhuj	----	----	----	----	----	----	45
Amreli	10	20	25	30	30	40	25

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WINTER TIME TABLE
FOR
BARODA - KATHIAWAR

Saturdays & Tuesdays

Air Ports		Time	Air Ports		Time
Baroda	Dep.	8-00	Amreili	Dep.	15-15
Bhavnagar	Arr.	8-45	Bhavnagar	Arr.	16-00
"	Dep.	9-00	Bhavnagar	Dep.	16-15
Amreli	Arr.	9-45	Baroda	Arr.	17-00

TIME TABLE OF BOMBAY-KATHIAWAR Service when Planes Touch Okha
Saturdays & Tuesdays

Air Ports		Time	Air Ports		Time
Bombay	Dept.	7-15	Okha	Dep.	11-40
Bhavnagar	Arr.	8-45	Porbandar	Dep.	12-10
"	Dept.	9-15	Jamnagar	Arr.	13-45
Rajkot	Arr.	10-05	"	Dep.	14-20
"	Dept.	10-20	Rajkot	Arr.	14-30
Jamnagar	Arr.	10-45	"	Dept	15-00
"	Dept.	10-55	Bhavnagar	Arr.	15-10
Okha (Mithapur)	Arr.	11-30	"	Dept	16-00
" "	Dep.	11-40	Bombay	Arr.	16-30
Porbandar	Arr.	12-10			18-00

SINGLE FARE IN RUPEES (Per Passenger)

Air ports	Bhavnagar	Amreli	Rajkot	Jamnagar	Okha	Porbandar	Baroda
Baroda	15	25	25	30	35	35	45
Bhavnagar	....	10	10	15	20	20	40
Amreli	10	....	20	25	30	30	50

28

28. H.P. File No. 9

Return Tickets, available for one month, issued at reduction of 20% Single Fare. A Passenger weighting upto 160 lbs, could carry with him 20 lbs. of luggage free of charge

It was the time when rapid development of aviation had taken place which compelled the British Government to make arrangement for refueling for providing suitable landing ground at Baroda. Which would be convenient to maintain stocks at petrol depot for the aviators and thereby Baroda would become one of the stocking points for the air navigation and aviation products and would probably assume a position of some importance on the air route. i.e. Karachi, Bhuj, Ahemedabad, Bombay Madras, Hydrabas, Trichinolpolly, Colombo which would touch territories of the Baroda state. [29]

The time had come which had brought about tremendous revolutionized changes in the field of transport and communication in 20th century which was done by rapid extension of air transport. Baroda, being on the main Bombay, Baroda and central Indian Railways would doubtlesssly give added facilities for the empire mail service to place in central India linked up with the Baroda Bombay and central Indian Railways. [30] Baroda was going to be an important centre upon the Bombay. Delhi air route at the same time air route of Karachi - Bombay - Ahemedabad Jodhpur Allahabad.

In the year 1934, His Highness' Government appointed a committee for discussing the question of selection of a suitable site for aerodromes for the purpose of storing petroleum stocks equipment and accessories necessary for the refueling of air craft and the committee was appointed under the president ship of sd. N.G. Shinde in 4th July, 1934. [31]

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29. H.P.O. File No. 1 P. 39
30. Ibid P. 173
31. H.P.O. file No. 5 P. 327

Aerodrome at Baroda was proposed in 1936. Captain Eden of the Aeronautical Training Centre of India visited Baroda in 1936. He suggested a site for Baroda aerodrome. when Sayajirao Gaikwad appointed the committee to consider the question of site for aerodrome with Mr. Vintcent of Tata Sons Airways. The proposed sites for aerodrome were Gorva site I, Gorva Site II. cantonment site, Harni Site I, Harni Site II, Warashia site and general Parade Ground. All above mentioned sites were considered from the point of view of their distance from the city of Baroda, their suitability from operational point of view, nature of soil and the area of land available to such a large extent with a provision for future expansion. [32] The proposed sites like Gorva I and Gorva II, cantonment site, Warashia site, and general Parade Ground were considerable as unsuitable for being costly and if construction of aerodrome was done on these places of propose sites it would have involved a large expenditure. The Burma shell company requested the Baroda Government to issue the order to select proposed site of Harni I for construction of aerodrome there.

To the company, it was a golden opportunity for Baroda to place Baroda permanently on the air map of India and if it was lost owing to delay it would have been difficult to divert traffic by air later on if a refueling station was established elsewhere instead of Baroda. [33]

The Burma shell oil storage and distributing company of India offered Baroda Government for making arrangement for refueling if Baroda Aerodrome at Harni was constructed which would require little preparation to make it a suitable landing ground for air craft. The air route between Jodhpur and Bombay might be conveniently broken at Baroda for refueling purpose. The company proposed to maintain their petrol depot for the convenience of landing ground.[34]

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32. Progress Report of Civil Aviation in Baroda State ,1937 -19 38

33. Vide H.P.O letter dated 29-9-1936, 30-9-36 H.P.O. file No.5 P. 256

34. From Correspondence of Barma Shell Company Bombay to the Department of Industry Commerce and Labour of the Baroda State 29-4-1936 H.P.O. file No. 2 P. 63

The site for aerodrome was selected (1936) in consultation with captain Alan. I- Eden of the Aeronautical Training Center of India visited Baroda in February 1935 and stayed there for a few days. He visited India with the subject of demonstrating rating capability of various type of medium at several important centers all over India including important Indian state like Baroda. Mr. Vintcent of the Tata sons Limited and Aviation Department, Bombay also participated in matter of promoting civil aviation. [35]

Baroda Government requested the Civil Aviation Authorities India for preparing scheme for aerodrome. The work would be executed by the engineering staff of the Baroda Government. Baroda Government would pay the cost of preparing the scheme for aerodrome. Harni site I was quite suitable which is situated at the center of the city along the main road built in those days with cement tracks half mile of city boundary, ideal for development which gave excellent air - approach and take off in prevailing direction of the wind on to open country. Site was upon waste land which could be acquired at an affordable cost.

The soil was inspected closely for surface cracks and any serious defect. The ground could be prepared for the landing of aircraft within a few months. Thus, land was acquired and work of constructing aerodrome was begun.

Construction of aerodrome was then completed in 1937 and landing ground was made suitable for fair - weather conditions. Baroda was thus made a halting place on Karachi- Colombo air route. The question of providing landing grounds at Navsari, Amreli, and Okha was then under consideration of Baroda government to encourage civil aviation and to connect other districts of the Baroda state to Baroda city. In 1940 landing grounds at Amreli were completed. [36]

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35. H.P.O. File No. 2 P.29

36. H.P.O. File NO. 5 P. 381

Baroda aerodrome was having necessary acquisition. Grading the landing ground with boundary marks, providing wire fencing, approach road, picketing base and three room's office building. It cost Rs. 1,15, 000 for those jobs. Efforts were made to make aerodrome all - weather one. Baroda Government had sanctioned Rs. 2,95,000/- for the construction of two pucca runways with French drains and installation of a wireless station. Night lighting equipment was to be taken in land when found necessary.

Harni Aerodrome was opened to public traffic by His Highness Government from October 20, 1937. [37] Linking Baroda with other centres of India by air was of vital importance to His Highness's Government. The state would be able to maintain its leading position among the other Indian states on point of air service.

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37. H.P.O. file No. 5 P. 389

Tata - Airways

Scheduled airline services in India can be said to have begun on October, 15 1932, when J.R.D. Tata, the Father of Civil Aviation in India and founder of Air India, took off from Karachi in a tiny, light, single-engine aircraft on his flight to Bombay via Ahmedabad. The airline grew over the years, and Tata Airlines was converted into a public company under the name of Air-India in August 1946.

In 1932 the first internal air service was begun by Tata Airways between Karachi and Madras via Bombay. Baroda Government wished that Empire Air Mail Service should be diverted via Baroda. Baroda Government approached Mr. Eadon of Air Training center of India limited to negotiate with Tata sons Aviation Department for taking advantage of Air Mail Service for the Baroda state. Feeder air service from Kathiawad joining with the main service at Baroda was extended. The empire Air mail service was inaugurated. Tata Airways intended to extent their air service to or through Baroda. Tata Airways proposed to join Baroda with Bombay, Ahmedabad, Indore and Okha and subsidy for that air service was asked for Rs. 20,000 per annum.

Tata Airways had decided to make Baroda as a regular halting place on Karachi- Colombo air service. For that Tata Airways sought approval from the Director of Civil Aviation and was ready to keep special equipment necessary for air service in Baroda. Baroda aerodrome was to be maintained all time & kept in serviceable condition. [38]

Baroda Government had discussions with J.R. Tata, the chairman of Tata Sons Limited, Aviation Department to extent air service in the Baroda state. Baroda-Ahmedabad service thrice in a week was proposed to provide direct air connection from Baroda to Ahmedabad. Tata Airways' southbound air craft from Karachi was to provide direct air connection from Baroda to Ahmedabad from Bombay flying to Karachi. Baroda Indore air line was proposed once in a week to connect Tata Air Service of Bombay.

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38. H.P.O File No. 4 P.127

Delhi Line was proposed to leave Baroda for Indore to connect Delhi and would return from Indore to Baroda providing direct connection from Delhi. [39]

Baroda Kathiawad air service would run over the route of Baroda, Bhavnagar, Rajkot, Okha weekly in each direction throughout the year. Baroda, Ahemedabad, Baroda-Indore, Baroda - Kathiawad air service would cost Rs. 1,32,000 per year. Baroda Kathiawad line during the rainy period of the year would depend upon service being available at the points touched in Kathiawad but aerodromes at Rajkot, Bhavnagar and Okha were made all-weather ground.

The Agreement was signed with the Baroda Government and the Tata Airways for the operation of the service provided for a refund to the Government of Baroda of a portion of the revenue earned from the carriage of passenger, mail and rest above a certain sum per annum. Thus, Baroda Government was given assurance of benefit by the success of the line without being involved in any capital expenditure. [40]

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39. Vinetcent of Tata S wrote to the Baroda Government in which air service to Baroda was proposed to be extended by connecting Baroda with different centres of the country. H.P.O. file No. 4 P. 1 to 4

40. Ibid

Indian National Airways Limited

Like Tata Airways and Air Service of India, Indian National Airways had contributed in the field of internal air transport. The company was formed in May 1933. It was to join with the Government of India and Imperial Airways Limited in forming Indian Trans – Continental Airways Limited in the operation of the Empire service between England and India. It was to organize and operate feeder Air service in India to serve the Empire route and to operate internal air service. The company's air craft had up to date flown approximately 13,00,000 miles and safely carried approximately 8,600 passengers.

His Highness' Government wanted to have benefit of air service of Indian National Airways which had practical experience in organising and operating air service in India. Moreover, the company had connection with Imperial Airways and Indian Trans – continental Airways and its good relationship with the Government of India. [41]

Indian National Airways had proposed new service from Bombay to Lahore and adjoining air route with Baroda, Jodhpur, Bikaner, Udaipur and Jaipur. [42] Bombay – Lahore Air mail and passenger service would follow the route Bombay – Baroda (235 miles) Baroda – Jodhpur (272 miles), Jodhpur – Bikaner (123 miles) and Bikaner – Lahore (248 miles) It gave a total route mileage of approximately 878 miles.

Travelling Times from Bombay to Lahore :

Bombay – Baroda	-	1 hour 25 minute
Baroda – Jodhpur	-	1 hour 40 minute
Jodhpur- Bikaner	-	0 hour 45 minute
Bikaner - Lahore	-	1 hour 30 minute

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41. H.P.O. file No. 8 P. 12-13

42. Ibid P. 14

Allowing for half an hour at Baroda, Jodhpur and Bikaner respectively the total flying time from Bombay to Lahore would occupy 6 hours and 50 minutes. The train journey occupied 36 hours. The service was to be operated thrice weekly.

The air service thus connected Baroda direct with Bombay and thence, by Tata's Air service with Hyderabad, Madras and Colombo. The service would afford a direct link between Baroda and the North of India through Lahore as well as Jodhpur state directly. It proposed for Air mail service. Indian National Airways was one of the most important internal air routes in India. The Bombay– Baroda Jodhpur –Bikaner Lahore air service commenced on 1st November 1939. [43]

In the spring of 1942 the results achieved by the operation of that service was carefully examined by a conference to which representatives of all parties interested in that service were invited; and a decision was then taken with regard to the future continuation of that service of Indian National Airways after expiry of the first year period of agreement.

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43. H.P.O. file No. 8 P. 72

Indian National Airways, Ltd.

Suggested Time Table[44]

Bombay – Lahore Service

NORTHBOUND

Friday

Departure. Bombay	05.30
Arrival. Baroda	06.55
Departure. Baroda	07.15
Arrival. Udaipur	08.20
Departure. Udaipur	08.40
Arrival. Jodhpur	09.30
Departure Jodhpur	09.50
Arrival. Bikaner	10.35
Departure Bikaner	10.55
Arrival. Lahore	12.55

Connecting with P. & O. arrivals at Bombay, connecting with K.L.M. Eastbound ex. Jodhpur Saturday.

Saturday

Departure. Bombay	10.30
Arrival. Baroda	11.55
Departure. Baroda	12.55
Arrival. Udaipur	13.20
Departure. Udaipur	13.40
Arrival. Jodhpur	14.30
Departure. Jodhpur	14.50
Arrival. Bikaner	15.35
Departure. Bikaner	15.55
Arrival. Lahore	17.25

Connecting at Jodhpur with Saturday's westbound Atlanta.

Connecting at Jodhpur with Sunday's Eastbound Atlanta.

Connecting with Tatas Northbound from Colombo the same day (which arrived at Bombay at 09.45) and

Connecting westbound K.L.M ex. Jodhpur on Sunday.

Wednesday

Departure. Bombay	10.35
Arrival .Baroda	11.55
Departure. Baroda	12.15
Arrival. Udaipur	13.20
Departure. Udaipur	13.40
Arrival. Jodhpur	14.30
Departure. Jodhpur	14.50
Arrival. Bikaner	15.35
Departure. Bikaner	15.55
Arr.Lahore	17.25

Fares

Bombay – Lahore

(Rate in Rupees Per Passenger)

Bikaner	45									
Jodhpur	65	I	25							
Udaipur	85	I	40	I	25					
Baroda	110	I	65	I	45	I	25			
Bombay	150	I	110	I	85	I	60	I	45	
	Lahor		Bikaner		Jodhpur		Udaipur		Baroda	

44. All the program tables taken from the H.P.O. file No. 8, P. 1,2,3

Indian National Airways

SOUTHBOUND :

Friday

Dept. Lahore	.....	10.30
Arr.Bikaner	.....	12.00
Dept. Bikaner	.....	12.20
Arr. Jodhpur	.....	13.05
Dept. Jodhpur	.....	13.25
Arr.Udaipur	.....	14.15
Dept. Udaipur	.....	14.35
Arr.Baroda	.....	15.40
Dept. Baroda	.....	16.00
Arr.Bombay	.....	17.25

Connecting at Bomay with PO. Homeward sailings.

Connecting with Eastbound K.L.M. ex. Jodhpur Saturday.

Saturday

Dept. Lahore	.....	10.30
Arr.Bikaner	.....	12.00
Dept. Bikaner	.....	12.20
Arr. Jodhpur	.....	13.05
Dept. Jodhpur	.....	13.25
Arr.Udaipur	.....	14.15
Dept. Udaipur	.....	14.35
Arr.Baroda	.....	15.40
Dept. Baroda	.....	16.00
Arr.Bombay	.....	17.25

Connecting at Jodhpur with Saturday's westbound Atlanta.

Connecting at Jodhpur with Sunday's Eastbound Atlanta.

Connecting with Tatas southbound to Colombo on Sunday (Colombo Service leaves Bombay at 13.30)

Connecting westbound K.L.M ex. Jodhpur on Sunday.

Wednesday

Dept. Lahore	.....	5.30
Arr.Bikaner	.....	7.00
Dept. Bikaner	.....	7.20
Arr. Jodhpur	.....	8.05
Dept. Jodhpur	.....	8.25
Arr.Udaipur	.....	9.15
Dept. Udaipur	.....	9.35
Arr.Baroda	.....	10.40
Dept. Baroda	.....	11.00
Arr.Bombay	.....	12.25

INDIAN NATIONAL AIRWAYS LTD.

Fares

Bombay – Lahore

(Rate in Rupees Per Passenger)

	Lahor	Bikaner	Jodhpur	Udaipur	Baroda
Bikaner	45				
Jodhpur	65	25			
Udaipur	85	40	25		
Baroda	110	65	45	25	
Bombay	150	110	85	60	45

44. Air Services of India's Program tables taken from H.P.O file No. 8 P.1,2, 3 & H.P.O. file No.9 P. 16, 17, 18

Schedule air transport started in India in1932. India was among the early starter in air transport but generally all the world over expansion of this mode of transport is a post –war phenomenon (second World War 1939 to 1945) After 1932 with the air services operated by Tata Airways, Air service of India Limited, Indian National Airways started air transport activities country wide. With the outbreak of the World War II in 1939, and Italy's entry into the field, the empire Airmail scheme was suspended in 1942, when Japan also entered the War the services of Indian airlines were requisitioned by the Government of India for defence operation.

The Second World War proved a great boom to the company's gained technical experience and strengthened their financial position. The end of War opened new chapter in the development of air transport in India. Thus, the post – war period witnesses a marked expansion in the field of air transport and a large number of scheduled and non- scheduled operation were now.operating air services in various directions. Passenger mileage flown by the Indian Airlines in 1948was about178 millions which was 1.35 per cent of the total world traffic freight carried by air in the same year 1948 was 262.5 million long miles.

After independence air transport was nationalized in 1953. Before that its existence was only symbolic and played relatively small role in the economy of the nation. The British Government never took any definite effort to develop air transport, because its use to them was limited and technological level of this industry of air craft was inadequate. Air transport to India was primarily used for passenger traffic.

After the enactment of Air Corporation Act in 1953, air transport was nationalized and two corporations were established viz Indian Airlines and Air India. Indian Airlines operates the domestic service and to neighboring countries while the Air India catered to international traffic in and out of the country.

Vayudoot was formed as a subsidiary of Indian Airlines and Air India and created to the feeder route in remote hilly and inaccessible areas. Pawanhans was formed in 1985 to run the helicopter service known as the helicopter corporation of India that provided service in support of the offshore oil drilling in India, besides linking Andaman, Nichobar and Lakshadweep with mainland and connecting inaccessible areas and the difficult terrains in Jammu- Kashmir, Sikkim and Northern states. The two Air corporations updated technology in the industry and today Indian Airlines and Air India have an all jet – fleet of the most modern type of aircraft.

Since 1991 the Government of India has permitted private operators to operate trunk route within India and compete with other airlines. There are a few small companies operating along with Indian Airlines on the domestic routes. There are the East west Airlines, Trans Bharat Aviation Jagson Airlines, City Link Airways Sahara India Airlines etc. Recently the Air corporation Act has been modified to facilitate the "Open skies" policy. In year 2006 (January) Sahara Indian Airlines merged with Jet Airways.

The Baroda State was the most fortunately situated for the establishment of an arrival aerial serving the country and for offering facilities to develop air transport. Baroda aerodrome is located in close proximity to the city which is ideal for accommodating a flying school club. Vast landing ground and local weather conditions are suitable for flying throughout the year.

Baroda Government started flying club base on entirely new foundations and designed with the full knowledge of flying club activities. The air craft industry which was developed slowly but steadily now offer equipment in the form of aircraft and engine and the modern aircraft show definite progress in the field of the technological improvement both in structure and economy because of the out come of many years' experience in operating aircraft.

The development of civil aviation in the Baroda State was not so tremendous as railways, roads and waterways. The state had to follow rules and regulations according to the convention of 1929 with the Government of India for maintaining uniform system in the field of air transport. It was perhaps great hindrance in the field of air navigation as the state had to depend on the officers and engineers of the air service company and had to pay annually large sums in lieu of their services which were always favored by the British Government. So considerable progress in that field could not be made and it was to take more time for the arrival of ripe time for internal state service. The use of air craft for the transport of passenger especially officers could be put into effect with considerable benefit and Baroda itself could be the central focus of a general service. [45]

The aerodrome which was built by His Highness's Government of the Baroda State was taken over by the Government of Bombay in 1949 with the merging of the Baroda state in Bombay prant. The Civil Aviation Department of Government of India assumed the responsibility for the maintenance of civil aerodromes in the country from April 1950 under the Federal Integration Scheme. The Indian Airlines began to operate flying schedule air service to and from Baroda airport. From 14th July 1969 and at present Baroda is linked with Ahmedabad and Bombay and with other airports. In short air link with Bombay, Delhi, Calcutta and Madras is provided through inter- connected flights operated by the Indian Airlines. [46]

Air traffic statistics for the year 1972- 73 disclose that 11,000 persons landed and 13,000 passengers boarded from the Baroda airports at Harni. [47]

Air transport is the quickest mode of transport and communication. Wherever, whenever roads, railways and waterways find difficulty to work, air ways work in the best way. It is always useful in the time of natural calamities. It was directly responsible for the development of aircraft industry and in field of internal and international tourism. It is tremendously useful for defence operation in form of air force.

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45. Progress Report of Civil Aviation In the Baroda State

46. Rajyagor S. B., Baroda District P.45 -46

47. Progress Report of Civil Aviation In the Baroda State

Baroda is situated on the line of Bombay Ahmedabad Delhi and serves good aerial centre serving the surrounding areas of the country and offers facilities to air transport which even today is of considerable importance. Baroda's civil aerodrome is located in close proximity to the city, is ideal for accommodating a flying club or school. The landing area is ample for the need of pupils and local weather conditions are suitable for flying throughout the year. The state was in fortunate position of being able to start flying club based on entirely new foundations and designed with the full knowledge of flying club activities. The air craft industry which was developed slowly but steadily now offers equipment in the form of air craft engine. [48.]

In late 1947 an agreement was reached with the Government of India for the formation of Air India International Limited to international services. Air India International, which was registered on March 8, 1948, inaugurated its international services on June 8, 1948, with a weekly flight from Bombay to London via Cairo and Geneva with a Lockheed Constellation aircraft. (The word 'International' was dropped in 1962). Effective from March, 1, 1994 the airline has been functioning as Air -India Limited.

The early 50s saw the financial condition of various airlines operating in India deteriorate to such an extent that the government decided to nationalize the air transport industry. Accordingly, two autonomous corporations were made responsible for all long-range international services under the Indian flag, and Indian Airlines was responsible for all domestic services, plus some short-range services to nearby countries.

Air India and Indian Airlines had a monopoly of scheduled air transport 'from to in or across India'. Air India carried about two thirds of the passenger traffic between India and overseas and had a flight network of 22,100 route miles.

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48. Progress Report of Civil Aviation in the Baroda State.

It connected Bombay , Calcutta, Delhi and Madras with a) London via Cairo, Rome, Geneva and Paris, (b) London via Karachi, Beirut/Damascus, Zurich and Dusseidort/Prague, c) Tokyo via Bangkok and Hong Kong, d) Sydney via Singapore and Darwin, and e) Nairobi via Aden/Karachiln 1957 the fleet consisted of eleven Super Constellations. Air India had also placed a contingent order for the prompt delivery of two new Super Consellations, conditional on Lockheed's finding a prompt buyer at satisfactory price for the three constellations.

However, Air India needed more aircraft to cope with growing traffic, and to maintain its business share on international routes. It was determined that three new Boeing 707 jets would have the same service capacity as ten Super-constellations. On January 31, 1957 , Air India signed a contract with Boeing for three Boeing 707-437 jets. In addition to the aircraft, the Air India jet project included radio, galley, and other aircraft auxiliaries, nine spare engines, other initial spares and stores, some overhaul facilities, a test cell and other special equipment, and flight simulator. The loan from the World Bank for $5.6 million was signed on March 5, 1957.

The first Boeing 707-437 was received in February 1960 .This marked the airline's entry into jet age. It also enabled Air India to extend its Bombay - London service to New York in May 1960. This was a major step in the airline's steady expansion into new markets.

Air transport has created certain opportunities for jobs. Airlines are the major travels industry employers, offering a host of jobs at various levels – ranging from entry point to the top management illustrative jobs are reservation agents, flight attendants including air hostesses, pilots, flight engineers, aircraft mechanics, maintenance staff, baggage handlers, airline food service jobs, sales jobs, computer professionals training staff, office assistants, clerical jobs and research jobs – the list can be quite long. Airlines Service related jobs can be in the Government as well as private sector – Civil Aviation Ministry, Airport Authority of India controlling some one hundred and

thirty big and small airports all over the country further subcontract activities to the private sector.

Development of transport considerably contributed in the development of a new industry i.e. tourism and air transport has contributed towards it on international level and tourism has always stood as a unique vehicle for the cultural propagation that is necessary for a deep understanding of people. Tourism, with its basic element of movement, stands for the possibility of communication between differing civilization and it has served in this sense since its first emergence. It has always been an essential medium for broadening the limit of human knowledge. It enlarges social contract and develops new habits and way of life.

Air transport can be a vehicle for international understanding by way of bringing diverse people face to face. It has played a major role in improving international understanding. It has been a contributor to international good will and as a prime means of developing social and cultural understanding among all people of the world. The interaction of a large number of people with the local population of the country goes a long way in increasing friendships. It can greatly enrich and promote friendship and goodwill. People belonging to different countries, practising different lifestyles and speaking different languages come together. It helps to break down prejudices, barriers and suspicions that exist between nations. The narrow rigid boundaries that keep people in compartments naturally tend to shrink and a positive move towards better international understanding begin to operate.

It is an important medium of social and cultural development and also of promoting lasting goodwill and friendship among the nations of the world. It also helps in the regional development of the country and acts as a means of social education and better understanding among the people in different regions of the country. In long run, the most important contribution of transport is developing understanding among varied cultures and life styles.

Travel industry fairs and exhibition are the major marketing vehicles in today's highly competitive market place. In spite of technological

advancement no country can – be self – sufficient. It is all due to developed transport system.

In short our world has become small every place on our earth is now known and shown on the maps. The barriers of distance have been broken in the last two centuries by the invention of steamship, railways, motor cars and the latest in the line aeroplanes. A man can have now breakfast in London, Lunch in New York and Dinner in Tokyo.

A lot of good things have been happened to human race. Industrialization and constant technological advancement has made the life of man easy. He does not have to work as hard as he did a hundred years ago.In major cities like Calcutta and Bombay are investing in rapid transit automated railway network rather than motorway to handle immense number of commuters and travelers. While railways and steamship companies were developing in the 19th Century Aircraft Industry tremendousley developed in the 20th Century.