

A Study of Inception and Growth of Civil Aviation in India

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Abstract:

Civil aviation sector in India is traversing through growth and development phase crossing many obstacles such as World wars, country's independence, changes in government policies & economic outlook most importantly liberalization and other factors. Here an attempt has been made to present the growth of civil aviation sector in India since its inception. The role and support of regulatory agencies in the civil aviation domain has been elaborated in their present form. Most importantly the role of Directorate General of Civil Aviation (DGCA), Bureau of Civil Aviation Security (BCAS), Airports Economic Regulatory Authority (AERA) besides Ministry of Civil Aviation. The important role assigned by International Civil Aviation Organization (ICAO) to Airports Authority of India (AAI) in control and management of the Indian air space extending beyond the territorial limit of the country as accepted has also been discussed. There is a discussion about airports' development and management mechanism taking into consideration the growth of civil aviation infrastructure in India, key initiatives under the National Civil Aviation Policy (NCAP) 2016 and Regional Connectivity Scheme (RCS). The paper presents historical account of more than a century long remarkable journey of Indian Civil Aviation sector.

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1. INTRODUCTION

Air transport plays important role in modern commerce, travel and communication and thereby has an important place in the nation's economic scenario. India was not far behind on the world map in embarking on commencement of air transport in the country. On 17th December 1903, Wright Brothers-Orville and Wilbur flew first ever successful heavier-than-air powered aircraft in North Carolina, USA. This is considered as initiation of the pioneer era of aviation in the world (Smithsonian National Air and Space Museum, n.d.).

India is one of the fastest growing aviation market in the world. According to Airport Council International (ACI), India reached to third place at the world level in 2018 in term of total passenger traffic, after United State and China, which establishes India's position in global aviation market.

2. LITERATURE REVIEW

BIRTH OF AVIATION IN INDIA: It is interesting to note that within less than a decade, first ever consignment of official mail in an airplane in the world was flown in India. Captain Walter Wyndham

(considered as founder of the air mail), had organized this flight on 18th February 1911, in association with Indian Postal authorities wherein Henri Piquet flew a Humber bi-plane with postal mails from exhibition grounds at Allahabad to Naini Junction and covered a distance of about six miles in 13 minutes. This event marked inception of air transport in India in 1911 and in the same year an Act was also passed to regulate flight of aircraft over Indian territory (Alka Sen,1998; S.K. Saraswati,2001).

Next round of significant progress of Indian air transport happened much after the First World War. Indian Air Board was formed in 1920 as an advisory committee to the Government of India. In 1926, it submitted a memorandum titled 'The Past History and Future Development of Civil Aviation in India'. The memorandum detailed strategic position of India as an important link in air communications between Great Britain and her Eastern Dominions. It recommended for its own dissolution and formation of a proper body for the Civil Aviation in the country. It emphasised that entirely foreign control over air transportation in India would not be very supportive of India's interests in civil aviation. It presented that Indian capital and enterprises must participate operationally and financially as a principal in contracts for external air services. Its main proposals were as following:

- (i) Establishment of landing and other ground facilities;
- (ii) Appointment of a whole time Director of Civil Aviation
- (iii) Survey of main trunk routes
- (iv) Commencing an air service between Calcutta and Rangoon with provision of subsidy grant to the operating company

The Government and the Indian Legislative Assembly approved the Board's recommendations in February

1927. Mr. Francis Shelmerdine became India's first Director of Civil Aviation in 1927 (Bhatt, 1997).

In 1925, the British Air Ministry entered into a contract with Imperial Airways to start regular service between London and Karachi. On 7th April 1929, Imperial Airways extended its London- Cairo service to Karachi. The Government of India established 'Indian State Air Service' (ISAS) and entered into sub-contract with Imperial Airways to extend its service to Delhi under a charter arrangement initially for two years. Operations were put in the name of ISAS but practically, Imperial Airways handled all operational and technical control including provision of the aircraft. In this way, ISAS started functioning on 20th December 1929. The namesake functioning of ISAS was much criticized in press and the parliament. The Government initiated to provide a fleet and an administrative setup of its own to ISAS but the project was halted abruptly on recommendation of a Retrenchment Committee of the Assembly in the wake of global economic depression. The charter arrangement with Imperial Airways lapsed in December 1931(J.R.D.,1961).

Delhi Flying Club, a small entity, received a Gipsy Moth aircraft on loan from the Government and operated the Karachi- Delhi service from January 1932 to July 1933 in an efficient manner. In this way, Delhi Flying Club became first Indian entity to offer air transportation service.

COMMENCEMENT OF SCHEDULED FLIGHT:

After a humble beginning by Delhi Flying Club, next milestone of starting schedule flight operation by an Indian entity was marked by Tata Airlines. Nevill Vintcent with a vast experience in Royal Air Force (RAF) collaborated with Tatas to realise untapped potential of commercial civil aviation in India. Vintcent had earlier surveyed a number of possible air routes in India. Their proposal in 1929 for a Karachi- Bombay- Madras service didn't get

approval from the Government. In 1930, Vintcent joined ISAS and got valuable operational experience of India. He returned back to Tatas in 1931. In 1932, the Government approved Tata's proposal to operate the Karachi- Ahmedabad- Bombay- Bellary- Madras mail service but no mail revenue guarantee or subsidy was approved. On 15th October 1932, JRD Tata flew a Puss Moth aircraft from Karachi to Bombay via Ahmedabad and further Vintcent flew it from Bombay to Madras via Bellary. This marked commencement of scheduled air transport service by Tata Airlines and a new beginning in history of Indian civil aviation. This humble journey started with a team of merely four people- JRD Tata, Vintcent, one whole time pilot and one engineer on a part-time basis (K. Saraswati, 2001).

EARLY MARKET DEVELOPMENT: At that time, the condition of aviation support infrastructure such as good airport for landing, radio aid etc. were very much absent. On Karachi- Madras 1300-mile route serviced by Tata, only Karachi had radio and night landing facilities; Bombay airport was not serviceable for four months in a year and during high tides. Tata Airlines flew 1,60,000 miles in its first year of operation.

In 1933, in agreement with the British Air Ministry, the government sponsored a new Indian company named Indian Trans- Continental Airways (ITCA). In ITCA, 51 per cent capital was held by Imperial Airways and the balance was held jointly by the government of India and a new Indian airline named Indian National Airways (INA). This ownership pattern violated the legislative provisions passed in 1927 that Indian entities will have 75 per cent of voting rights in any company formed to operate over Trans-India routes. ITCA was entrusted to offer Karachi- Singapore service of the UK- Australia route. Due to ITCA, Indian staff got training facilities and Britain also offered a subsidy for six years. ITCA operated every alternate service on Karachi- Delhi- Calcutta- Rangoon- Singapore sector of the route to

Australia under Indian Flag but practically, Imperial Airways provisioned all managerial, technical and staff support. ITCA operation may be understood as a guise and not operation by an Indian entity.

After Tata Airlines, second Indian airline was formed in Delhi in the name of Indian National Airways (INA) in 1933. It started its weekly passenger, mail and freight services on Calcutta- Rangoon and Calcutta- Dhaka route from 1st December 1933. INA also became an Indian shareholder in ITCA along with the government of India (Seth, 2006).

In 1937, third Indian airline named 'Air Services of India' came into existence. It had passenger service on Bombay- Kolhapur route and between Bombay and few places in Kathiawar. The airline charged only a little more than second class rail fare whereas the actual cost at full occupancy was even above first class rail fare. This resulted in financial loss for the airline and it was closed within two years.

Tata Airlines and INA continued to progress on steady expansion path. In 1937, the annual miles flown increased to almost four times than in 1933. After first year, Tata Airlines had profit every year until its incorporation as 'Air India'.

Empire Air Mail Scheme, formulated by British Post Office in 1934, was launched in India in June 1937 on London- Cairo sector of the U.K.-India- Australia route and was expanded to all India in February 1938. Tata Airlines and INA secured ten-year contract for carrying first class mail on Karachi- Colombo and Karachi- Lahore routes. They were ensured minimum guaranteed payments for their service. This facilitated the two airlines to expand and strengthen their operations. This was reflected in manifold increase in miles flown, passengers and carried freight and mails in the following year.

This was followed by the Second World War years which severely impacted Indian Civil Aviation as

elsewhere in the world. Empire Mail Scheme was shrunk to a small fraction and high control was also put on the passenger traffic. Japan entered the war in December 1941. By February 1942, all services from the west were directed to Kolkata as terminal point in the east. All aviation infrastructure in the country was put to the use of the war's need by closing services on many domestic routes. Mail contracts were closed in 1938 and the two airlines entered into new contact with the Government agreeing to pay all fixed standing charges, a fixed charge per mile and share in commercial revenue if any. During the war, the airlines were also engaged in special diversified assignments such as transportation of supplies in Iraq, movement of civil refugees from Burma, surveying South Arabian route for RAF and maintenance of its equipment etc. The second world war phase also resulted in at least 44 new aerodromes with concrete runways and presence of radio network and beacons(J.R.D.,1961).

Captain F. C. Tymms became the Director of Civil Aviation in 1931. He was entrusted to work on post war plans for civil aviation in the country. He submitted a well thought report covering all aspects of civil aviation in September 1943. The Tymms Plan estimated total capacity requirement in post-war period as 20 million ton miles with a requirement of less than forty DC-3 type aircraft. It was recommended that a maximum of four airlines should be allowed to operate so as to facilitate sustainable finance and efficient use of manpower, aircraft and other ground resources. Additionally, formation of an autonomous body named 'Air Transport Licensing Board' (ATLB) was also proposed to deal with licensing activities to scheduled carriers. Most of the provisions of the Tymms Plan were accepted by the Government

On 1st January 1946, commercial status was reinstated for civil aviation in India. The interim Government, formed in September 1946, abandoned Tymms Plan's

recommendation to limit number of operators to four only. After the war, Dakotas aircraft were available in surplus at cheap price. A number of entities emerged to operate in Indian sky; 11 companies were granted licenses to operate over 51 routes. However, this decision was proved a fatal move later. Many firms were allowed to operate on same route and presence of too many players resulted in substantially lower occupancy of available capacity. The firms also lacked experience, operating costs escalated to unmanageable level and maintenance of aviation resources was also compromised. With partition of the country in August 1947, using Karachi as a base became unavailable for India. However, refugees' movement between two new countries- India and Pakistan, and military operation in Kashmir brought some demand for the air transport during 1947(Seth, 2006).

Tax on fuel was as high as about one third of the total fuel cost whereas chargeable tariffs were fixed by ATLB at such low level that economic viability was foregone. ATLB allowed little upward revision in fare in 1947 and the next year. In 1949, permissible uplift weight for Dakota was also moved a little upward. Some rebate on customs duty on aviation fuel was also allowed in 1949. However, all this benefit was exhausted to offset rise in fuel price. Two new operators had to close in 1948 due to bad economics. Following the Government's instruction, ATLB granted 10-year duration license to operators in July 1949.

Night Air Mail Service was introduced in January 1949. In this scheme, aircraft carrying mails were to fly from four cities- Delhi, Bombay, Madras and Calcutta before midnight and they all had to meet at Nagpur. At Nagpur, sorting and exchange of mail was to be processed after which each of the four aircraft was to fly to one of the four cities as per plan. This service was targeted to deliver mails received at one of the four cities by evening to one of the terminal four cities

by next day morning. Although, the scheme was good but economic conditions and technical support facilities were not commensurable for this service at that time. Existing airlines were not able to generate enough revenue to sustain their operation. Even with considerable opposition, the service was launched on 31st January 1949. This was world's first overnight air mail service. Indian Overseas Airlines was engaged for the service but in May 1949 the service was halted due to serious financial failure. Two other airlines were engaged for a while but it didn't continue for long. In October 1949, a non-scheduled operator was licensed to operate the night mail service (J.R.D.,1961).

STATE CONTROL: Tata Airlines became a public company in August 1946 with a new name 'Air India'. India's geographical situation was of strategic importance on air route from Europe to East and Australia. In 1947, Air India submitted a proposal to the new Government of India after independence to make advantage of this and start international services. The Government accepted the proposal and Air India International Ltd. (AII) was incorporated on 8th March 1948 with 49 % capital infusion by the Government with option to acquire additional 2 % from Air India. Air India was given 10-year contract as Technical Managers for AII and was also its Chief Sales Agents in India. AII's maiden service was inaugurated on 8th June 1948 on Bombay- London sector. One domestic airline was also allowed to start services to Bangkok in 1949, to Singapore in 1950 and to Jakarta in 1952. In 1950, Indian aviation sector was operating in huge loss. Government of India constituted the 'Air Transport Inquiry Committee' on 8th February 1950 to look into the state of affairs of the aviation sector and to suggest suitable measures. The committee submitted its report in September 1950. It was brought out that licensing too many players resulted in wasteful competition and inefficient financial performance became proved fatal

for the industry. The report also reflected on other aspects such as limiting the license to few players, provision of subsidy, substitutes for nationalization etc. The report's suggestions were largely rejected by the Government.

Air Corporation Act was passed in March 1953 by the Indian parliament to nationalize the air transport in the country. It decided to merge domestic airlines to form the entity called 'Indian Airlines Corporation' (IAC) and to form 'Air India International' (AI-I) by taking over the Air India International Ltd. The Government became controlling authority of these two new corporations in all respect (Bhatt, 1997; Chattopadhyay, 2015).

IAC come into existence on 1st August 1953 by merger of eight airlines and was to serve on domestic routes and services to nearby countries. Integration of personnel, work culture, compensation structure, expertise, technical abilities and different resources from different entities into one was not an easy task. IAC received at its disposal 99 aircraft, maintenance infrastructure at six places, buildings and about seven thousand people in its workforce. IAC's fuel cost was about 35 % of its total operating expense. In 1959-60, IAC was among lowest cost airlines in the world even with burden of high tax on fuel, upward wage revision and many outdated aircraft in its fleet. AI-I had challenge of building its own capability of technical expertise, support services and infrastructure for running under the government control. In 1959, about 4600 people were on AI-I's rolls. In 1960, it served 28 cities including Singapore, Hong Kong, Tokyo, Sydney, Moscow, New York, Kuwait, Paris, Jakarta, Nairobi and others in 21 countries. On 19th April 1960, Boing 707 aircraft started AI-I's service to London; this marked entry of the Jet age in Indian aviation. In 1960, Indian Air Transport was supported by a network of 85 aerodromes, 81 radio communication stations, 140 navigation and approach

aids and other facilities maintained by the Central Government

OPEN SKY POLICY: April, 1990, Government of India launched Open-Sky Policy and permitted to entry of private air taxi operator to operate flight in Indian airports. As a part of open sky policy, ended the monopoly of Indian Airlines (domestic flag carrier), Air India (international flag carrier) and Vayudoot (feederline) over scheduled domestic air transport services by repealing the Air Corporations Act of 1953 and replacing it with the Air Corporations (Transfer of Undertaking and Repeal) Act, 1994. Air transport services is now permitted to private operators. In the domestic air transport service sector now Foreign Direct Investment (FDI) of to 49 percent equity stake and NRI (Non Resident Indian) investment of up to 100 percent equity stake were allowed by the automatic FDI route (Chattopadhyay, 2015; Anuradha Prof. & Farida Shah, 2015).

NO FRILL-LOW COST MODEL: In 2003, Air Deccan has entered in to the Indian civil aviation market as a torchbearer of no frills-low cost model and challenged the exiting market player's sentiments. This model made flying for common which were earlier limited to elites. This model reduced aviation cost reasonable level which in turn Indian aviation market witnessed significant growth in the last fifteen years. Presently, Indian aviation industry is ruled by private airlines and these include low cost carriers such as Indigo, GoAir, SpiceJet etc, who have made air travel reasonably priced (HUMPHREYS, 2006; Chattopadhyay, 2015).

AIR TRAFFIC SCENARIO: In the year, 2018-19 Indian airports handled 344.70 million passengers through more than 100 operational airports which are under the control of Airports Authority of India and Joint Ventures operators. The traffic is mostly handled by India's major airports (Airports Authority of India

Traffic Reporter, March 2019). Major airport means any airport which has or is designated to have annual passenger throughput in excess of one and half million or any other airports as the central Government may, be notification, specify as such (Airport Economic Regulatory Authority of India Act, 2008).

AIRPORTS AUTHORITY OF INDIA: Indian airports were owned developed, managed and controlled by Civil Aviation Department (CAD) of Directorate General of Civil Aviation (DGCA). International Airports Authority of India (IAAI) was established in April 1972 by International Airports Authority Act 1971, provided management of Bombay (Santa Cruz), Calcutta (Dum Dum), Delhi (Palam) and Madras (Meenambakkam) airports where in international air transport services used to operate in India (Govt. of India, 1971). National Airports Authority of India (NAAI) was formed in 1986 through an act of the National Airports Authority of India Act, 1985 for construction, development and management of domestic airports in India other than the airports under IAAI. The NAAI was also providing air traffic service like flight information, alerting service, air traffic advisory, air traffic control, area control and approach control in all civil operational airports of India (Govt. of India, 1985). Airports Authority of India (AAI) was formed on 1st April 1995 through the Airports Authority of India Act, 1994 by merging erstwhile National Airports Authority of India and International Airports Authority of India for effective administration and cohesive management of all civil aviation operational airports or intend to operate civil operation in India. AAI entrusted with task of creating, upgrading, maintaining and managing civil aviation infrastructure both on the ground and air space in the country (AAI Corporate Plan, 2017).

AAI manages a total of 137 airports which include 23 International airports (3 Civil Enclaves), 10 Custom Airports (4 Civil Enclaves) and 104 Domestic airports (23 Civil Enclaves). AAI provides air navigation

services over 2.8 million square nautical miles of air space.

DIRECTORATE GENERAL OF CIVIL AVIATION (DGCA): Directorate General of Civil Aviation (DGCA) under the ministry of civil aviation is the regulatory body governing the safety aspects of civil aviation in India (S.K.Saraswati, 2001).

DGCA vision is *Endeavour to promote safe and efficient Air Transportation through regulation and proactive safety oversight system in India*. Its broad responsibility includes:

- Aircraft registration for civil aviation purpose;
- Licensing of pilots, aircraft maintenance engineers, air traffic controllers and flight engineers, and conducting examinations and various checks for that objectives;
- Accreditation of aerodromes;
- Permitting of Air Operator's Certificates to Indian carriers and regulation of air transport services operating to/from/within/over India by Indian and foreign operators, including permission of scheduled and non-scheduled flights of such operators;
- Conducting investigation into incidents and serious incidents involving aircraft up to 2250 kg AWW and taking accident prevention measures including formulation of implementation of Safety Aviation Management Programmes;
- Instruction and oversight of matters related to Air Navigation Services. Synchronization at national level for flexi-use of air space by civil and military air traffic agencies and interaction with ICAO for provision of more air routes for civil use through Indian air space;

BUREAU OF CIVIL AVIATION SECURITY(BCAS): The Bureau of Civil Aviation Security was originally set up as a Cell in the

Directorate General of Civil Aviation (DGCA) in January 1978 on the recommendation of the Pandey Committee constituted in the wake of the hijacking of the Indian Airlines flight on 10th September, 1976. The primary role of the Cell was to coordinate, monitor, inspect and train personnel in Civil Aviation Security matters. The BCAS was reorganized into an independent department on 1st April, 1987 under the Ministry of Civil Aviation as a sequel to the Kanishka Tragedy in June 1985. The main responsibility of BCAS include in India:

- Framing Aviation Security Standards in line with Annex 17 to Chicago Convention of ICAO for airport operators, airlines operators, and their security agencies accountable for executing aviation security (AVSEC) measures.
- Monitoring the execution of security rules and guidelines and carrying out survey of security requirements.
- Confirm that the persons executing security controls are properly trained and possess all competencies required to perform their duties.

NATIONAL CIVIL AVIATION POLICY 2016: National Civil Aviation Policy (NACP 2016) was approved by the Cabinet on 15th June 20106 and notified in the Gazette on 29th June,2016 which object is to establish an integrated eco-system which will lead to significant growth of civil aviation sector in India. This is in turn would promote tourism, increase employment and lead to balanced regional growth. The NACP also target to take flying to the masses by making it affordable and convenient, enhance ease of doing business through deregulation, simplified procedures and e-governance and promote the entire aviation sector chain in a harmonized manner covering cargo, MRO, general aviation, aerospace manufacturing direction and skill development.

REGIONAL CONNECTIVITY SCHEME (RCS)- UDE DESH KA AAM NAAGRIK (UDAN):Regional Connectivity Scheme (RCS)- UdeDeshkaAamNaagrik (UDAN) as anticipated in National Civil Aviation Policy (NCAP) 2016 with the double target of promoting overall growth and making flying reasonable for masses. The scheme, which would be in operation for a period of 10 years, anticipated providing connectivity to un-served and underserved airports of the country with the revival of present air strips and airports. This would be accomplished through a budgetary stimulus in the form of Central and State government concessions, along with Viability Gap Funding to the attracted airlines to start operations from such airports, so that the passenger fares are kept reasonable. Restoration of these air strips and airports will be demand driven depending on stable demand from airline operators.

RCS-UDAN will be launched by way of:

- Revival of un-served or under-served airports/routes, including routes connecting Agatti and Leh,
- Concessions by distinctive stakeholders,
- Viability Gap Funding (VGF) for operators under RCS
- Cost-effective security arrangement by Bureau of Civil Aviation Security (BCAS) and State Governments.

In RCS, State Government are also obligation to provide following concessions:

- RCS will be made operational only in those States which decrease VAT on Aviation Turbine Fuel (ATF) at these airports to 1% or less for a period of 10 years.
- State Government will provide land free of cost and free from all encumbrances and also

provide multi-modal hinterland connectivity (road, rail, metro, waterways, etc.) as required.

- State Government will provide police and fire services free of cost. Power, water and other utilities will be provided at considerably in concessional rates.
- VGF will be shared between MoCA and the State Government in the ratio of 80:20. For the North Eastern States, the ratio will be 90:10. The payment of the full amount of VGF will be made to the airline operator from the Regional Connectivity Fund (RCF) and the State Governments will be subsequently asked for reimbursement.

FDI LIBERALIZATION:Government of India has raised the FDI limit from 49% to 100% in Scheduled and Non Scheduled Air Transport Services, FDI in Scheduled Airlines up to 49% permitted under automatic route and FDI beyond 49% through Government permission. For NRIs, 100% FDI will continue to be permitted under automatic route. However, Foreign Airlines would continue to be permitted to invest in capital of Indian companies operating scheduled and non-scheduled air transport services upto the limit of 49% of their paid up capital subject to the prescribed procedures in the present policy. FDI route for existing airport projects have also been automatic upto the limit of 100% (Anuradha Malviya , Prof. Farida Shah, 2015;Ministry of Civil Aviation Annual Reports, 2016-17).

PAWAN HANS LIMITED:Pawan Hans Limited (PHL) was incorporated in October, 1985 (under the name of ‘Helicopter Corporation of India Limited’) as a Government Company under the Companies Act with the major aim of providing helicopter support services to the oil sector in offshore exploration, operate in hilly and inaccessible areas and make available charter flights for elevation of travel and

tourism. Pawan Hans is one of Asia's largest helicopter operators having a well-balanced own operational fleet of 43 helicopters as on 31.11.2016 at present with pan India presence (Ministry of Civil Aviation Annual Reports, 2016-17; www.pawanhans.co.in).

AIRPORTS ECONOMIC REGULATORY AUTHORITY (AERA): The Airports Economic Regulatory Authority of India (AERA) was formed in 2009 under The Airports Economic Regulatory Authority of India Act, 2008 to regulate tariff and other charges for the aeronautical services rendered and to observe performance standards at major airports. The Authority finalized its regulatory philosophy and guidelines in 2010-11 for fixing the Aeronautical tariff of Airport Operators and Independent Service Providers of Cargo Facility, Ground Handling and Supplying Fuel to Aircraft.

The main responsibility of the AERA includes:

- To fix the tariff for the aeronautical services
- To fix the amount of Development Fees in respect of major airports
- To fix the amount of PSF levied under rule 88 of the Aircraft Rules, 1937 made under the Aircraft Act, 1934(22 of 1934)
- To observe the set performance criteria relating to quality, continuity and trustworthiness of service as may be specified by Central Government or any authority accredited by it in this behalf (Ministry of Civil Aviation Annual Reports, 2016-17).

RESEARCH GAP:

Historical development of Indian civil aviation was also not much studied; therefore, few published research papers are available on this field. In 1960, Mr. J.R.D. Tata, Chairman Air-India International himself had presented a paper on the story of Indian

Air Transport in the sixteenth British Commonwealth Lecture in London, till that time the air transport in India was thirty years old. During these periods Mr. J.R.D. Tata was actively associated with air transport in India. He learned to fly in 1929 and personally flew the first scheduled transport service in India in 1932. The Story of Indian Air Transport was divided in three periods. First, the early days up to and including the second world war, second the stormy post war year from 1946-1953 when this industry shown the greatest development and third the present era since nationalization in 1953.

Indian aviation industry came in the lime light after opening the sector to private players, and introduction of low cost airlines, which resulted a significant growth. A lot of studies on Indian civil aviation had been done after the liberalization of the sector. Hence, this paper is full filling this major gap on the study of civil aviation sector in India. This paper is written with the effective and rigorous data collection. The scopes of this study is to give a complete broad chronological development of civil aviation sector in India since its inception to till date. This study has revealed that despite early start of aviation in India and significant growth witnessed in recent years in civil aviation sector in India. This sector has not reached the level, where it was expected to reach. This paper attempted to filling the existing research gap of emerging potential market so that all stakeholders be actively include to find out the untapped potential market of civil aviation sector in India.

3.0 OBJECTIVES

The objective of this paper is to:

- Find out the development of Indian aviation industry since its inception in to till 2018,
- Identification major issues and policies implemented for the Indian aviation industry,

4.0 ANALYSIS:

This paper is a theoretical review. The analysis is based upon historical data.

ANNUAL TRAFFIC HANDLED (1932-2018)

Scheduled Air Transport in India started on 15th October 1932 by Tata Airlines when Mr. J R D Tata flown from Karachi to Bombay via Ahmedabad. In 1933, a Delhi based company, Indian National Airways joined in providing scheduled air services. In 1937, 'Air Services of India' came into existence as third scheduled air service provider however this was closed within two years. The following years till 1946 utilized India's aviation capacity mainly to support second world war related activities.

In 1946, Tata Airlines was converted into a public company under the name of 'Air India'. In 1948, Air India International was incorporated and weekly Bombay- London service commenced in June 1948. In 1953, Indian parliament enacted the Air Corporations Act which resulted in nationalization of the scheduled air transport companies in the country. Two corporations namely- Indian Airlines and Air India International were formed. All the existing air companies except Air India International Ltd. were merged to form Indian Airlines and operated domestic services and international services to seven neighboring countries viz. Afghanistan, Bangladesh, Maldives, Nepal, Pakistan, Sri Lanka and Thailand. Similarly, assets of Air India International Ltd. was undertaken to form Air India International and operated long and medium haul international services(Chattopadhyay, 2015).

A third level feeder service airline named Vayudoot was formed in 1981 in order to cover domestic destinations not covered by Indian Airlines. This stopped operation in 1997(Alka Sen, 1998).

After economic liberalization path was taken by the country, the aviation scenario also got changed with de - monopolization of the air transport services. The Air Corporations Act, 1953 was repealed and the Air Corporations (Transfer of Undertakings and Repeal) Act, 1994 was enacted by the Parliament. Accordingly, private airlines were permitted to operate scheduled services in domestic sector (Chattopadhyay, 2015). Later on, successfulness of low cost airlines model has accelerated the growth of aviation market in India.

Civil aviation in India has expanded its horizon since inception. The journey started with merely one air passenger in 1932, crossed 10000 mark in 1944, one lakh mark in 1946, one million mark in 1962, one crore mark in 1984, ten crore mark in 2015-16 and has reached to more than 147 million air passenger in 2017-18. The year wise passenger carried on all scheduled services by Indian carriers since inception are given in Annexure-I.

5.0 CONCLUSION:

In this paper, various sector of the aviation industry of India have been studied. There are basically three core stakeholders in the aviation sector namely the airspace, the airlines and the airports. The regulatory body oversees all these three stakeholders. The airport infrastructure has also continuously improved across the country with cutting edge technological and innovative solutions. India aviation sector is using state of the art technology at par with the developed countries such as; DIGIYATRA, Smart Security Lane with Automated Tray Retrieval System (ATRS), Inline Baggage System, self-Bag Drop and Check-in, using facial recognition and body scanners to ease of passenger movement and boost security.

National Civil Aviation Policy (NCAP 2016) brought out by the Government of India with the vision to improve ease of doing business through simplified

procedures, deregulation and e-governance thereby making flying affordable and convenient and pave for significant growth in the civil aviation sector.

The new civil aviation policy aims to give a push to Maintenance, Repair and Overhaul (MRO) sector. The MRO business of the Indian carriers is estimated to be around Rs 5000 crore. But 90% is currently spent outside India. The government has made provisions for suitable incentives for MRO activities and service providers like rationalized custom duty and simplified procedure for clearance of goods. India has a potential to become a MRO hub in Asia through attracting business from foreign airlines which in turn the sector can provide significant contribution for increasing total GDP of India (Sinha, 2016).

Despite an early start in the 1911, the Indian civil aviation sector has grown slowly in India because the air transportation was traditionally restricted up to the elite and not the common people. However, Indian aviation sector has been shown recent years a significant growth due to liberalisation of the sector, entry of low cost carriers and increase of middle income group which are putting more challenge in future (Satpathy, Patnaik, Kumar, 2017; ACI, WATR, 2018).

Though India has reached the third position in total air passenger handling in the aviation world but its size in comparison to United States and China is very less. During 2018, United States, China and India have handled 1800, 1266 and 341 million passengers with their percentage share of world total passenger traffic is 20.4%, 14.4% and 3.9% respectively. The total population of United States, China and India are 327, 1428, 1352 million with their percentage share is 4.3%, 18.7% and 17.7% respectively in 2018 of the world total population. The unprecedented growth is being witnessed in the Indian aviation market in recent years, though impressive, is significantly lower than its untapped potential.

Indian aviation industry is witness of an organized evolution from a public sector controlled to a private sector dominated, industry driven, performance oriented and dynamic sector. The reform process in the sector had a far reaching impact and helped to unleash the enormous growth potential.

According to Research Institute Oxford Economics, all the top 10 fastest growing cities by GDP between 2019 and 2035 will be in India. Fast growing cities will have to have commensurate growth in infrastructure. Therefore, Indian civil industry has to formulate growth oriented policies which will facilitate to create additional capacity and upgrade its airside and city side infrastructure at a rapid pace. India has to advance its state of art technology use for aviation industry.\

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Annexure-I

ANNUAL PASSENGER TRAFFIC CARRIED ON ALL SCHEDULED SERVICES BY INDIAN CARRIERS SINCE INCEPTION			
(In Number)			
Year	Passengers	Year	Passengers
1932	1	1976	4534024
1933	155	1977	5093286
1934	757	1978	6036450
1935	553	1979	6557785
1936	349	1980	6514629
1937	1238	1981	7498382
1938	2104	1982	8290913
1939	3518	1983	9850002
1940	3646	1984	10131691
1941	3747	1985	10823895
1942	4659	1986	11485219
1943	7574	1987	12332243
1944	13433	1988	12433071
1945	24090	1988-1989	12192819
1946	105251	1989-1990	12068473
1947	255000	1990-1991	9901291
1948	341186	1991-1992	10855293
1949	357000	1992-1993	9985470
1950	452869	1993-1994	9831750
1951	449000	1994-1995	9864165
1952	434000	1995-1996	13449581
1953	404000	1996-1997	14542071
1954	432000	1997-1998	14981063
1955	468894	1999-1999	15545108
1956	559000	1999-2000	16367781
1957	615000	2000-2001	17539916
1958	696000	2001-2002	16552360
1959	736000	2002-2003	18151799
1960	855203	2003-2004	20169524
1961	973941	2004-2005	24771264
1962	1032607	2005-2006	31752173
1963	1176330	2006-2007	43353973
1964	1388753	2007-2008	53492771

Annexure-I

ANNUAL PASSENGER TRAFFIC CARRIED ON ALL SCHEDULED SERVICES BY INDIAN CARRIERS SINCE INCEPTION			
(In Number)			
1965	1414784	2008-2009	49516433
1966	1548919	2009-2010	56948624
1967	1829480	2010-2011	67000819
1968	2108229	2011-2012	75216631
1969	2490409	2012-2013	71594505
1970	2571600	2013-2014	76433474
1971	2546594	2014-2015	87412197
1972	3285764	2015-2016	103822908
1973	3372187	2016-2017	124562836
1974	3037274	2017-2018	147120152
1975	3839919		

Source: Author's compilation from

Tata, J. R. (1960). The Story of Indian Air Transport. *The Sixteenth British Commonwealth Lecture, London.*

India Air Transport Statistics Year Book (Several issues), DGCA, Govt. of India

* The Passengers traffic progress during 1932-1947 pertain to Domestic Air Transport only and 1948 onwards the traffic details are for both the Domestic and International Air Transport.

** The Passengers traffic detail for the year 1947, 1949, 1951 to 1954 and 1956 to 1959 were available in thousand which were converted in numbers.