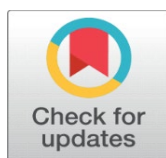


HISTORY OF THE DEVELOPMENT OF AEROPLANES IN THE INDIAN SUBCONTINENT IN PRE-INDEPENDENCE PERIOD

Moitreya Ray¹ 

¹University Research Fellow, Department of Museology, University of Calcutta, Kolkata, West Bengal, India



Received 13 July 2022
Accepted 15 August 2022
Published 30 August 2022

Corresponding Author

Moitreya Ray, mrmusl_rs@caluniv.ac.in

DOI

[10.29121/granthaalayah.v10.i8.2022.4727](https://doi.org/10.29121/granthaalayah.v10.i8.2022.4727)

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Copyright: © 2022 The Author(s). This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

With the license CC-BY, authors retain the copyright, allowing anyone to download, reuse, re-print, modify, distribute, and/or copy their contribution. The work must be properly attributed to its author.



ABSTRACT

Winning the blue sky became possible with the invention of the motor operated aero plane by Orville Wright and Wilbur Wright—the Wright Brothers in 1903. Shortly after their invention, aeronautic companies established in America and Europe started manufacturing aero planes. The year 1911 marked the beginning of the Civil Aviation in India when the Humber-Sommer biplane manufactured in England by Humber took 10-kilometre (approx.) flight in 15 minutes carrying about 6,500 mails. Since then, a continuous technological advancement in aero plane manufacturing had been noticed that not only contributed significantly to the military aviation during the two World Wars but also flourished the Civil Aviation sector for fastest communication worldwide. Prior to the Independence of India, a good number of aero plane models manufactured by different companies occupied the Aviation Sector. It is a matter of proud that India was among the privileged countries where aviation started within a decade of its invention. More than a century old Indian Civil Aviation at present is one of the fastest developing aviation markets in the world according to the International Air Transport Association (IATA). In this present paper an attempt has been taken to document the various aero planes flew in the sky of the Indian Subcontinent to understand the history of the Indian Civil Aviation in the pre-Independence period in the light of its demand and popularity that led India in achieving scientific temperament and technological advancement.

Keywords: Aircrafts, Civil Aviation, Pre-Independence, Monoplane, Biplane

1. INTRODUCTION

The Britannica defines an 'aeroplane' as "...a class of fixed wing aircraft that is heavier than air, propelled by a screw propeller or a high velocity jet and supported by the dynamic reaction of the air against its wing" [Encyclopaedia Britannica. \(2004\)](#). Out of the variety of aircrafts available across the world, such as aeroplanes, helicopters, balloons, gliders, which fly in air, aeroplane is the most demanding and presently an inevitable component in the modern transport system that is ruling the sky across the world today. There are evidence of myths of flying gods and heroes in almost civilizations in the world and also mentions in the Rig-Veda that talk about the humans' desire of flying since the dawn of civilization. In modern period a good number of scientists tried successful flight by

developing aeroplane among them few notable inventors were the Italian inventor Tito Livio Burattini of 17th Century, the Spanish inventor Diego Marín Aguilera of 18th Century and Sir George Cayley of 19th Century who is first called the "father of the aeroplane". [History of Aviation. \(2022\)](#) Ultimately Orville Wright and Wilbur Wright—the Wright Brothers, succeeded in flying motor operated aeroplane on December 17, 1903.

Shortly after the successful flight of the first aeroplane, several aeronautic companies established in America and in Europe for manufacturing aeroplanes for military purposes and as public transport. In England Humber company manufactured few license-built models the Sommer biplane by using steel and wood. Out of them one was bought by Maharaja Bhupinder Singh of Patiala in 1910 and for that he built an airstrip in Patiala [Bhupinder Singh of Patiala. \(2022\)](#). On 18 February 1911 Henri Pequet flew this Sommer Biplane to carry out the world's first official mail about 6,500 in number, from the United Provinces Exhibition at Allahabad to Naini. It was about 10 Kilometre (approx.) distance that took approx. 15 minutes to cover. This marked the beginning of Civil Aviation in India, and it was the first aeroplane that took a commercial flight for civilians in the Indian subcontinent. The early phase of the Civil Aviation was chiefly developed under the British Government and was dominated especially by British aeroplanes manufactures. Till mid-1920s, most of the activities were performed by the aviation enthusiasts or military personnel and there was no regular or scheduled aviation service for civilians. The first Airline that operated in India was the Imperial Airways in 1929. Its scheduled services routed from United Kingdom to Delhi and gradually the aviation activities were sprouting up throughout the Indian Subcontinent. Before the Second World War, there were very few airlines in the Indian subcontinent; however, after the cessation of the War the number of the airlines was flourishing. From 1911 to 1947 the Indian sky witnessed numerous aircrafts, manufactured mostly in England and America.

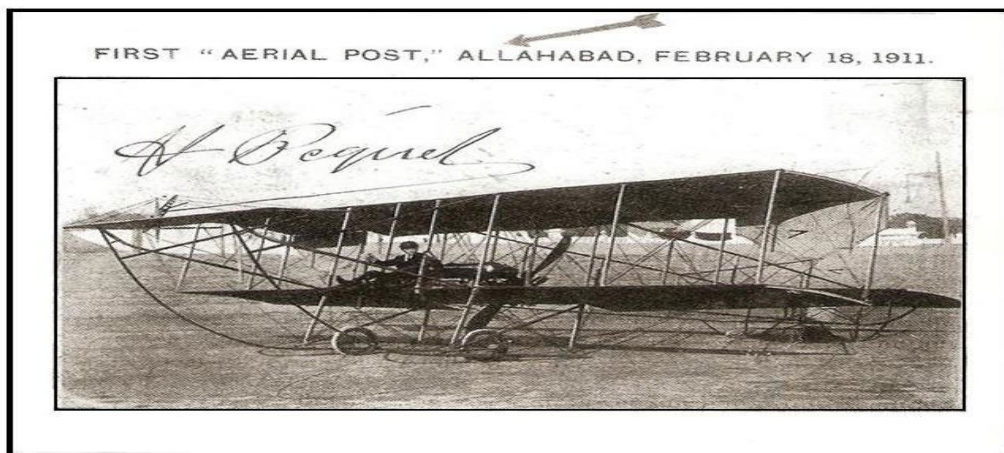
2. METHODOLOGY

The research work followed for the article is an ex post facto research work with descriptive approach. It comprises with the chronological study of civil aircrafts that were used in pre-independent India with special reference to their travelling distance, carrying capacity and social history. Sources of information are mainly secondary, collected from few published books, newspapers, and articles available in website. Some primary data regarding the aircraft models are collected by visiting few museums in India that exhibited them. As the time period of the research work is in the pre-Independence period of India or in undivided India, in the title undivided India is mentioned as the Indian Subcontinent.

3. THE AEROPLANES THAT FLEW IN THE SKY OF THE INDIAN SUB-CONTINENT

3.1. HUMBER SOMMER BIPLANE

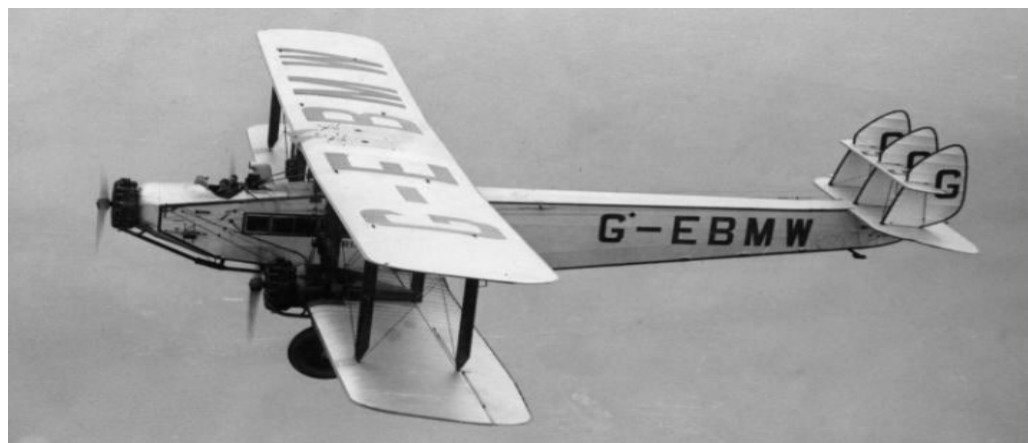
It has been already mentioned that the Humber Sommer Biplane manufactured in England by Humber was the first aeroplane that took its first flight in the Indian Sky on 18th February 1911 for 15 min to cover 10 kilometres (approx.) carrying 6,500 mails from Allahabad to Naini [Stroud, J. \(1962\), p.479](#). This kind of aircrafts made of steel and wood had a very primitive look and was mainly used for military works or by few aviation enthusiasts rather than in civil transport. [Figure 1](#)

Figure 1**Figure 1** A Picture of a Humber Biplane with the Signature of Mr. H Pequet

Source <https://postalmuseum.si.edu/collections/object-spotlight>

3.2. DH 66

The Imperial Airways was a Commercial long-range British airline that continued its operations from 1924 to 1939 in the countries which were under the British rule. In 1939 it was merged with the British Overseas Airways Corporation (BOAC), which became the British Airways in 1974. The Airlines in the mid-1920s for its air services in between Cairo and Karachi, ordered the De Havilland Aircraft Company of England for a special aircraft that could cope up with the challenges of extreme tropical climate such as high temperature and could cross high mountains. The De Havilland designed the DH 66 biplane that had a length of 16.92 meter (55'6") and a wingspan of 24.23 meter (79'6") [National Advisory Committee For Aeronautics. \(1926\)](#). It had a composite structure of metal and wood with a tubular fuselage made of steel and a cockpit for two pilots at the nose position. As per the requirement of the Airlines it had a compartment made of plywood to carry 7 passengers and space for carrying mails and cargo. The aeroplane used two Bristol Jupiter VI series of engines as its power-plant [BAE Systems. \(2022\)](#). It also had three fins and rudders at the tail portion that gave it a distinct look. [Figure 2](#)

Figure 2**Figure 2** The DH 66 Aero Plane Having Registration Number G-EBMW

Source <https://www.baesystems.com/en/heritage/de-havilland-dh-66-hercules>

Out of eleven DH 66 manufactured by the De Havilland Aircraft Company, five were bought by the Imperial Airways. It has been noticed that one of them, the DH 66 (G-EBMX) started its journey from Croydon in London on 27th December 1926 for a survey flight to India and reached Karachi on 6th January 1927 and Delhi on 8th January 1927. The aeroplane was re-named as *City of Delhi* by Lady Irwin on 10 January 1927. It took its return journey and reach Cairo on 7 February 1927. The Aeroplane took its first flight on the day of the inauguration of the Karachi to London via Cairo route of the Imperial Airlines in India on 30th March 1929. It took seven days to reach Karachi from London. The path was a flight from London to Basle (Switzerland)—a train to Genoa (Italy)—Short.8 Calcutta Flying Boat to Alexandria—a train to Cairo—flight to Karachi. Later, the route extended up to Delhi. All the crew members were male. Initially the service was for the men doing colonial administration, business or research who can afford to fly, but the lists of passengers progressively diversified. Interesting and charming reports regarding exciting flying experiences during travel from one place to another were published in magazines, books, and newspapers [Imperial Airways. \(2022\)](#). [Figure 3](#)

Figure 3



Figure 3 Short 8 Calcutta Flying Boat Invented by Short Brother Used to Take Its Regular Flight from Genoa to Alexandria to Connect the London Karachi Flying Route

Source https://en.wikipedia.org/wiki/Short_S.8_Calcutta , Imperial Airways, 2022

3.3. THE HANDLEY PAGE H.P.42 AND H.P.45

These were biplane with four engines designed and manufactured by Handley Page, a British aviation company. This aeroplane was introduced by the Imperial Airways in the Cairo to Karachi Sector replacing DH 66 in 1931. Four such aeroplanes were bought by the Airlines. On 1st July 1933 the first London to Calcutta service was departed. By 1940 all the models were lost.

The Handley Page H.P.42 was a large sesquiplane made of duralumin that made it very light. The wings, tail and fuselage were decorated with fabrics. The fuselage had two sections, containing two luxurious and spacious passenger cabins with wide windows where 18 and 20 passengers could seat respectively. Later the number of passenger cabins was increase up to six with more passenger carrying capacity. Initially, there were no seatbelts, but later air accidents forced the

Imperial Airways to instal this feature. On the ground, passengers could both board and get down from the aeroplane without using ladder due to the low position of doors. There was a crew compartment at the front side and a space for storing baggage. H.P.42 was powered by 4 Bristol Jupiter XIF engines, each capable of producing up to 490 hp (370 kW) and H.P.45 had four Jupiter XFBM supercharged engines, that could generate a maximum of 555 hp (414 kW) each.

[Figure 4](#)

Figure 4



Figure 4 The Handley Page H.P.42 Hanno (Reg. No. G-AAUD) flew in between Cairo to Karachi since 1931

Source https://cs.wikipedia.org/wiki/Handley_Page_H.P.42, Imperial Airways, 2022

3.4. GIPSY MOTH

Earlier it was developed as DH 60 *Cirrus Moth* and flew for the first time in 1925 at Stag Lane, piloted by Geoffrey de Havilland, the owner of the company. To improve its efficiency, the Cirrus engine was replaced by the Gipsy 1 propeller engine. The resulting aircraft was re-designated as DH 60G *Gipsy Moth* [BAE Systems. \(2022\)](#). Although Gipsy Moth was a small aeroplane of length 7.29 meters, wingspan 9.14 meters and height 2.68 meters [The Canadian Museum of Flight. \(2022\)](#) it achieved its worldwide fame for its renowned pilot Miss Amy Johnson, who was the first women pilot of the World who in her solo flight in 1930 she travelled from London to Australia and in her journey, she landed in several places including Karachi, Allahabad, Jhansi, and Calcutta [Fyzee, M. \(1991\)](#), p. 59-61. The aeroplane is now at the display of the Science Museum, London. [Figure 5](#), [Figure 6](#)

Figure 5



Figure 5 The first Women pilot of the World Miss Amy Jonson who in her solo flight travelled from London to Australia with the Gipsy Moth

Source <https://www.independent.co.uk>

Figure 6

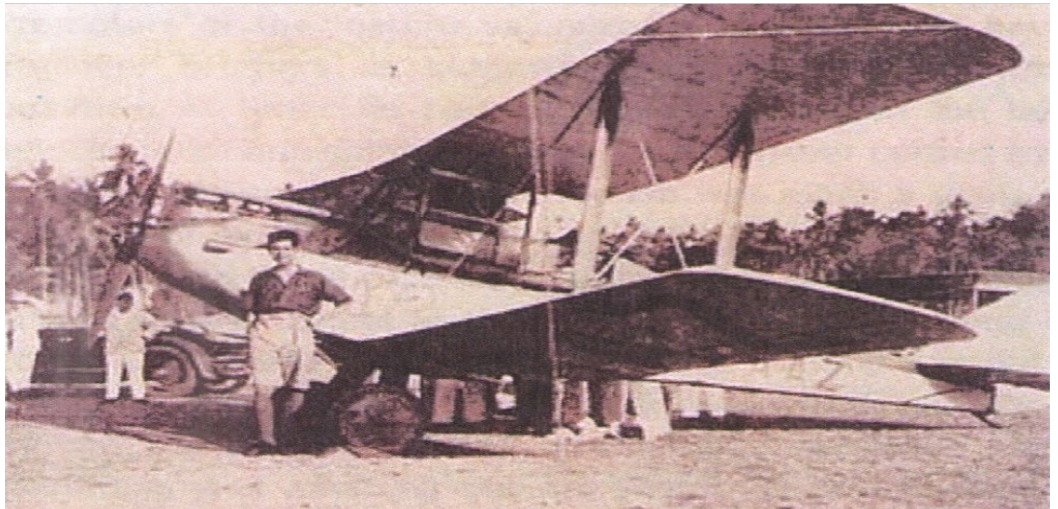


Figure 6 Aspi Engineer, with His De Havilland Gipsy Moth

Source <https://parsikhabar.net/heritage/aspi-engineer>

The aircraft had a fuselage which was basically a plywood box the outside was covered by fabric. Classified as a biplane, the aircraft had a folding wing, a very common feature of the early *Moths*, to save space while garaging and it was able to house two passengers.

Inspired by the solo flights of the Europeans including Miss Amy Jonson, Prince Aga Khan in 1929 declared a prize worth 500 Pound to the first Indian who can fly solo from England to India, following eastward or westward, to encourage flying among the Indians. In May 1930, 26-year-old JRD Tata and 17-year-old Aspi Engineer took part in the competition. Both flew solo the Gipsy Moth. JRD Tata flew from Karachi to London and Aspi Engineer from London to Karachi. In this contest

Aspi Engineer beat JRD Tata by few hours only and won the race and the Aga Khan Race Price held in 1930 Fyzee, M. (1991), p.47.

3.5. DH PUSS MOTH

A very important aircraft for the Indian Civil Aviation history was the Puss Moth of the 'Moth' series of aeroplanes by the De Havilland Aircraft Company. Initially developed as DH 80, completely made out of wood, the enterprise later produced the DH 80A with steel fuselage having fabric coverings and was named as 'Puss Moth'. It was a high wing monoplane with a dimension ¹ of 7.62-meter x 11.20-meter x 2.13 meter The Canada Aviation and Space Museum. (2022). Powered by single 120 HP Gipsy II or 130 HP DH Gipsy Major 1 engine BAE Systems. (2022) the aeroplane was able to carry 2 passengers. The prototype of the DH 80 (A-AAHZ) first launched on 9th September 1929.

It was on 15th October 1932, JRD Tata, the father of Indian Aviation and the eminent industrialist as well as the owner of the Tata Airlines piloted a DH Puss Moth himself from Karachi to Bombay to inaugurate **the first air mail service in India by an Indian airline under the name of the Tata Air Service**. The Tata Airlines later became Air India. The postage stamp issued in 1979 commemorates the event. Figure 7

Figure 7



Figure 7 A Commemorative Stamp Released by Postal Department of Government of Showing the Image of a Puss Moth Aircraft with a Registration Number VT-AND

Source http://postagestamps.gov.in/Stamps_List.aspx , postagestamps.gov.in/

3.6. LEOPARD MOTH

Resembled almost the same in appearance as Puss Moth, the Leopard Moth was the next successful production of the De Havilland in 1933 and ended in 1936. Initially developed as DH 85, the Leopard Moth was a high wing monoplane of dimension 7.47-meter x 11.43-meter x 2.67 meter National Advisory Committee for Aeronautics. (1933). It was a single engine aircraft using a wooden fuselage, which, as claimed by the company, made the aeroplane more robust and lighter, easier to inspect and simpler to repair (p. 2). Three passengers could board in the aircraft, but it had enough space to carry baggage. It had single DH Gipsy Major series of engine as its power-plant.

¹ Here dimension is taken as Length X Wingspan X Height

The aeroplane piloted by G. D. Havilland won the King's cup race in mid-1933 and achieved popularity among then airlines. In India, the Nizam's State Railways first acquired the aeroplane. Later when J.R.D. Tata was going to celebrate the 30th anniversary of the Tata Airlines in 1962, he was in search of a Puss Moth aircraft. Due to its unavailability, he wanted a Leopard Moth. At that time the Associated Airworks Ltd., Calcutta was the owner of a Leopard Moth in India [Fyzee, M. \(1991\)](#), p. 121, which was originally bought by the Nizam's State Railways with registration number VT-AKH. After a prolong process of making the aeroplane worthy of flying, Mr Tata flew it on 15th October 1962. Later in 1982, at his age of 78, Mr. Tata again flew the Leopard Moth to commemorate the 50th anniversary of Tata Airlines. The aircraft is still hanging at the Aero Club of India in the Safdarjung Airport, New Delhi as a living legend [Thacker, T. \(2016\)](#). [Figure 8](#)

Figure 8



Figure 8 The Living Legend, Displayed at the Safdarjung Airport, New Delhi. The Leopard Moth Flew by JRD Tata

Source <https://www.asianage.com/india/all-india>

3.7. ARMSTRONG WHITWORTH ARETHUSA

The Armstrong Whitworth AW 15 *Arethusa*, also famous as the *Atalanta* class aircraft was manufactured by Sir W. G. Armstrong Whitworth Aircraft Limited in U.K. during early 1930s. The company initially developed a High-wing monoplane named as AW 15 *Atalanta*, which was constituted with a mixed structure of plywood, steel, and fabric. The *Atalanta* was later renamed as *Arethusa*.

The *Atalanta* class of aircrafts had a dimension of 21.80-meter x 27.45-meter x 4.26 meter [National Advisory Committee For Aeronautics. \(1932\)](#) and was able to carry 9 to 17 passengers along with 3 crews. These aircrafts used four engines of 'Double Mongoose' series, which helped the aircraft to travel a distance of 1030 km. The forward mounting position of the engines used to give the aeroplane a distinguishable appearance.

According to available resources mentions of eight AW 15 series of aircrafts have been found that were included in the fleet of Imperial Airways and among them the *Atalanta* (G-ABPI, LATER VT-AEF *Arethusa*) and the *Aurora* (VT-AEG) were handed over to the Indian Trans Continental Airways (ITCA) [Stroud, J. \(1962\)](#), p.589. The Imperial Airways and the ITCA jointly started a service from Karachi to Calcutta in 1933 with the *Arethusa* (VT-AEF). The *Arethusa* (VT-AEF) and the *Aurora* (VT-AEG) were later acquired by then Indian Government in 1941 (p. 488). [Figure 9](#)

Figure 9



Figure 9 The Atalanta Class Aircraft of ITCA and the Imperial Airways

Source https://biggles.fandom.com/wiki/Armstrong_Whitworth_Atalanta

3.8. AIRSPEED FERRY

The Ferry was an early 1930s biplane model manufactured by the Airspeed Limited, U.K. The Airspeed Limited was established in 1931 at Yorkshire, England by Alfred Hessel Tiltman and Neville Shute Norway. The design of the aircraft *Ferry* initially developed to serve the necessity of renowned aviator, Mr Alan Cobham on behalf of the National Aviation Day Limited. It followed a wooden configuration and had a dimension of 12.10-meter x 16.76-meter x 4.34 meter². There was an enclosed cockpit near the nose of the aeroplane and a passenger cabin situated behind it that could house 10 passengers. The aircraft could travel a range of 547 km [BAE Systems. \(2022\)](#). As a biplane the *Ferry* had some notable features. Firstly, the lower wings of the aircraft were affixed atop the fuselage unlike the usual wing attachments of then biplanes. The second important feature was the *Ferry* powered by three engines—two Gipsy II engines at the lower wings and one Gipsy III engine was fitted at the forward-centre position of the higher wing. These two special characteristic features gave the *Ferry* a distinguishable appearance among the contemporary biplanes.

On 5th April 1932, the prototype *Ferry* (G-ABSI) performed its first flight. One of the *Ferrys* was delivered to the Indian enterprise the Himalayan Air Transport and Survey Limited [BAE Systems. \(2022\)](#). [Figure 10](#)

² Data collected from the Motorsport Magazine and converted to the S.I. unit

Figure 10



Figure 10 The Airspeed Ferry Having a Distinguishable Outer Appearance in Contemporary Biplanes

Source https://www.baesystems.com/en/heritage/Airspeed_AS4_Ferry

3.9. DH 86 EXPRESS

With the growing demand of the civil aviation competitions among the airlines was noticed regarding the design of the aircrafts. To meet this demand De Havilland manufactured the DH 86 in 1934 to fulfil the necessity of the QANTAS Airways of Australia. It was a single pilot model; thus, it was rejected by the airline on the ground of pilot fatigue in the long distance. Then De Havilland designed the double pilot DH 86 Express, and it was manufactured till 1937.

As a biplane the DH Express was made of wood having a dimension of 13.39-meter x 19.66-meter x 3.81 meter [National Advisory Committee for Aeronautics. \(1934\)](#). Using two DH Gipsy Six-1 engines as its power-plant the aeroplane could obtain a maximum speed of 274 km/h and could travel a distance of 1220 km. It could carry a load of 16.82 meter³ and could accommodate 10 passengers. The prototype DH Express flew for the first time on 14th June in 1934. Some of the DH Expresses were bought by the Imperial Airways that were to be used in their European as well as in Empire routes [Stroud, J. \(1962\)](#), p. 589. The Tata Airlines included this aircraft to their fleet from the October of 1938 (p. 487). [Figure 11](#)

Figure 11



Figure 11 The Picture of a Flying DH 86 Express Aircraft

Source <https://www.baesystems.com/en/heritage/dh86-express>

3.10. DC-3 DAKOTA

Described by General Eisenhower as, “one of the four weapons of the war” Fyzee, M. (1991), p. 97 the DC-3 was a renowned production of the Douglas Commercials of the United States. Famous as Dakota, the DC-3 not only kept its deep impression in the military operations, moreover, brought a revolution to the post World War II passenger transportation.

As a successful derivative of its ancestors the DC-1 and the DC-2, the DC-3 were all metal monoplane of dimension 19.65-meter x 28.96-meter x 5.16 meter Eden, P.E. (2015). It used two Pratt and Whitney engines as its power-plant that allowed it to cover a range of 1650 km. Piloted by two crews the Dakota could house 24 passengers. Figure 12

Figure 12



Figure 12 The Picture Showing a Dc 3 Dakota

Source https://af.wikipedia.org/wiki/Douglas_DC-3 Google images

Although in India the DC-3s were included in the fleet of the Indian National Airways and in the Tata Airlines but after the cessation of the war, it brought a huge change to the Indian civil aviation sector. At that time, then Indian Government was selling war surplus aircrafts in cheap rate which flourished the growth of private aviation companies throughout the Indian subcontinent. The phenomena brought a new arena to the Indian civil aviation history. The DC-3 model (VT-ATI) was also used to carry the first Indian Ambassador from India to the U.S.S.R., Mrs Vijay Laxmi Pandit Stroud, J. (1962), p. 493.

3.11. VICKERS-ARMSTRONG VIKING

The Viking aircraft was the first British commercial aeroplane flown after the cessation of the Second World War. It was designed by British aircraft manufacturer the Vickers-Armstrong Limited BAE Systems. (2022). In the year of 1927 the company was formed after the merger of two British Companies namely the Vickers Limited and Sir W.G. Armstrong Whitworth and Company.

The Vikings initially were familiar with different names like the ‘Wellington Transport Aircraft’ or Vickers VC-1. The prototype of the aircraft performed its first flight (G-AGOK) on 22nd June 1945. The Vickers also developed another version of the Viking named the *Viking 1B*, which was bought by the Indian National Airways BAE Systems. (2022). They received their first Viking (VT-AZA

Jumna) on 8th August 1947. The Air India also included the Vikings to their fleet in April 1947 [Stroud, J. \(1962\), p. 492-493. Figure 13](#)

Figure 13



Figure 13 The Photograph of a Viking Aircraft Belonged to The Indian National Airways
Source Annals of British and Commonwealth Air Transport

The Viking 1A had a length of 19.86 meter and a wingspan of 27.20 meter [Aero Corner. \(N.d.\)](#). The VC 1B was a stretched to forward version of the VC 1A. This special arrangement allowed the aircraft to carry 3 extra passengers (whilst VC 1 was able to carry 21). Later the passenger capacity was extended to 27. Powered by two Bristol Hercules series of engines the aeroplane was able to travel 2753 km along with two pilots and four crews.

3.12. DH DOVE

A bird can sing freely only when it is out of the cage and in view of that the renowned enterprise De Havilland released their new-born 'Dove' aeroplane to the blue sky on its 25th anniversary in 1945. The aircraft was manufactured for conducting aerial surveys, emergency duties like air-ambulance, visits of the company-executives etc. For that it was designed to accommodate 8 to 11 passengers and with working table. Having a length of 11.96 meter and a wingspan of 17.40 meter ³ the DH Dove followed an entirely metal construction. The Dove (Devon) was powered by two Gipsy Queen Series of propeller engines and could fly a range of 1416 km (880 miles) (as per the information of the HAL Heritage and Aerospace Museum). The prototype (G-AGPJ) made its first flight on 25th September 1945. In India the Dove was operated mainly by Airways (India) Ltd. [Stroud, J. \(1962\), p. 491 and Indian Airlines \(p. 499\). Figure 14](#)

³ This is the data for *Devon*, which was a military version of the Dove (BAE Systems).

Figure 14**Figure 14** The Dove (Devon) Kept at The Outdoor Display of HAL Heritage and Aerospace Museum

Source <https://www.youtube.com/watch?v=UYAXOadpVvM>

3.13. BRISTOL 170

The Bristol 170 was a monoplane developed by the Bristol Aeroplane Company of Britain. It was designed specially to transport vehicles in the jungles of Burma and India. The aircraft was easily recognisable with a boxy fuselage. At the nose position of the aircraft, there was a rounded door, also termed as 'clamshell door', used to give an easy access of vehicles inside the cargo bay.

Characterized by a high-raised cockpit the Bristol 170 had a dimension of 20.83-meter x 37.92-meter x 6.56 meter. Powered by two Bristol Hercules engines the aircraft was able to travel a distance of 1320 km [Moorabbin Air Museum. \(2022\)](#).

The prototype of Bristol 170 (G-AGPV) flew for the first time on 2nd December 1945 [BAE Systems. \(2022\)](#). According to collected data the Dalmia Jain Airways, an Indian airline, was the owner of these aircrafts with registration numbers VT-CHL and VT-CID [Stroud, J. \(1962\)](#), p. 492. [Figure 15](#)

Figure 15**Figure 15** A Bristol Freightier Aircraft with Open Cargo Door at Front

Source

https://en.wikipedia.org/wiki/File:Bristol_Freighter_Palmerston_North_New_Zealand_1974_-_Flickr_-_PhillipC.jpg Google image

4. CONCLUSION

While studying various aeroplanes flew in the sky of the Indian subcontinent prior to the Independence of India, it has been observed that since the invention of the first successful flight of the Wright Brothers' aeroplane in 1903, within a short span of time, how the aviation sector achieved the rapid progress through the technological advancement. The growth was initially for the need of the British Government to look after its colonies in different continents, for the need of the World Wars and later it has contributed to every sector including the transport of common people. Now, we cannot imagine our transport system without aviation. From the two-seater aeroplane, today we have about 850 passenger carrying capacity double decker aeroplane (Airbus A380-800) and speed has increase from 2.5-kilometre (approx.) per hour to 3500 kilometres (approx.) per hour (The Lockheed SR-71 Blackbird is the fastest among the jet aircrafts in the world) and this advancement is still continuing. Looking back to the genesis of the aeroplane, today, it is necessary to document the chronology of this progression so that coming generation can get a root of the evolution of aeroplane in which they would be boarding frequently. We have already lost numerous aeroplanes because earlier no one think it necessary to preserve them when it became non-functional. So, only the archival record is available to trace them. Appreciating the effort taken by the Heritage Centre and Aerospace Museum of the Hindustan Aeronautic Limited (HAL), where aircrafts manufactured by the company are all preserved with its specifications, more such efforts are required from government, freelancers, corporates and museums to reconstruct the history of the civil aviation in India by preserving the aeroplanes if present or developing models of the lost aeroplane with their specifications. Several instances are present in Europe and United States where people can see their aviation history in several dedicated museums of Aviation or Aerospace. Indian museums in this context should come forward to take the responsibility to acquire, conserve, research, communicate and exhibit the country's aviation history and heritage in accordance with the latest definition of museum coined by the International Council of Museums (ICOM).

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

Firstly, I want to thank my supervisor Dr. Dhriti Ray, Assistant Professor, Department of Museology, University of Calcutta who has guided me during the construction of the article. I also would like to thank the authority of the HAL Heritage and Aerospace Museum, Bangalore from where I have collected relevant data and photographs which I have used in my research work as well as in the present article. Finally, I am expressing my sincere gratitude to the Department of Museology, University of Calcutta who has given me the chance to pursue my Ph.D. and the present article is prepared on the basis of the collected data regarding the research work.

REFERENCES

- Aero Corner. (N.d.). Vickers VC.1 Viking.
BAE Systems. (2022). De Havilland DH 66 Hercules.

- BAE Systems. (2022). De Havilland DH 80 Puss Moth.
- BAE Systems. (2022). Airspeed AS4 Ferry.
- BAE Systems. (2022). Bristol 170 Freighter.
- BAE Systems. (2022). Vickers VC1 Viking.
- Bhupinder Singh of Patiala. (2022). In Wikipedia.
- Eden, P.E. (2015). The World's Greatest Civil Aircraft : An Illustrated History. Amber Books Limited.
- Encyclopaedia Britannica. (2004). Airplane. In T. Pappas (Ed.), Britannica Ready Reference Encyclopaedia, 40.
- Fyzee, M. (1991). Aircraft And Engine Perfect : The Story of JRD Tata who Opened up Skies for his Country. Tata Mcgraw-Hill Publishing Company.
- History of Aviation. (2022). In Wikipedia.
- Imperial Airways. (2022). In Wikipedia.
- Moorabbin Air Museum. (2022). Bristol Type 170 Freighter VH-ADL.
- National Advisory Committee For Aeronautics. (1926). A New De Havilland Commercial Airplane : The D.H.66 With Three Bristol "Jupiter" Engines. (Aircraft Circular No. 10).
- National Advisory Committee For Aeronautics. (1932). Armstrong-Whitworth A.W. XV "Atalanta" Airplane (British) : A Commercial Multiplace Cantilever Monoplane. (Aircraft Circular No. 167).
- National Advisory Committee for Aeronautics. (1933). The D.H. 85 "Leopard Moth" Airplane (British) : A Three-Seat Cabin High-Wing Monoplane. (Aircraft Circular No. 186).
- National Advisory Committee for Aeronautics. (1934). D.H. 86 "Express Air Liner" (British) : A Four-Engine Biplane. (Aircraft Circular No. 189).
- Stroud, J. (1962). Annals of British and Commonwealth Air Transport, Putnam.
- Thacker, T. (2016). Air India to Restore Tata's Leopard Moth. Deccan Chronicle.
- The Canada Aviation and Space Museum. (2022). De Havilland D.H. 80A Puss Moth.
- The Canadian Museum of Flight. (2022). DH 60 Gipsy Moth.