



Balloon Transport and Its Impact on Tourist Development in Luxor: A Study in Transport Geography

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ABSTRACT

Air transport in general and balloon transport in particular have an effective role in transporting passengers and goods from one place to another as well as clearly saving effort and time. The invention of the balloon was one of the technological revolutions in the field of air transport, which played a clear role in revitalizing the domestic tourism movement for many countries.

The entry of the balloon into the city of Luxor has caused a major leap in the field of tourism development through seeing many of the monuments spread from the air. That is, seeing these monuments in their natural state, and many nationalities use the balloon in Luxor for the purpose of tourism, which is in the early morning or at the end of the day.

Keywords: Balloon, transport, Luxor, tourist development, tourism.

Introduction

A balloon is a machine that rises to the top and then returns to the ground. The balloons consist of a balloon filled with a gas less dense than atmospheric air (helium or hydrogen gas) suspended in the balloon, and a box in which people and goods are carried. The balloon is a Greek word derived from $\alpha\eta\rho$ aer (air) + $\sigma\tau\alpha\tau\acute{o}\varsigma$ suspended in French) and was given this name because of their use of the "air and gas balance" that forces it to float.

First: The Origin of the Balloon and Its Entry into Egypt

A - A brief history of the origin of the balloon:

Balloons are the first means by which humans were able to rise into the atmosphere using machines lighter than air. The history of balloons begins at the end of the eighteenth century, first with hot air balloons, and then with hydrogen. Balloons were used at the beginning of the twenty-first century in sports activities, entertainment and tourist activities.

The Montgolfier brothers made their first attempt with a paper balloon filled with hot air in 1782. The first rise of a hot air balloon took place near Lyon, France, on April 25, 1783.

It reached a height of 300 meters, and made its first show on June 4, 1783, when the balloon rose to more than 1800 meters. On August 27, 1783, Jacques Charles, with the help of the Robert brothers, launched the first hydrogen-filled airship in Paris and flew this balloon for a distance of 25 km.

Joseph Michel is considered the first to come up with the idea of the balloon when he saw the smoke rising from the fire. Then, Jack Charles filled the balloon with hydrogen and raised it to 3000 meters in the air and it returned to the ground after a flight that took 35 minutes. Until today, there are only two means to control the balloon. If we throw sandbags from the balloon, its weight will lighten and rise, but if we make part of the gas leak out, then the balloon will descend.

In 1852, the French engineer Henri Giffard managed to build a small balloon—47.6 meters long and 13.3 meters in diameter at its widest part, and it was propelled by a 3-horsepower steam engine suspended on a cart at a distance of 7 meters below the balloon. Giffard flew a balloon in a historical flight from Paris to Tarabya at a distance of 27.7 kilometers and an average speed of 8 kilometers per hour. Although the Giffard balloon was successful in the flight, its engine power was very low with regard to its weight.

In 1901, Alberto Santos Dumont was able to build a balloon in which he was able to make a circular trip from the Parisian suburb of Saint-Cloud and around the Eiffel Tower back to the starting point. He travelled 11.2 kilometers in 29 minutes and 31 seconds and won a prize of 125,000 francs at that time.

B - The entry of the balloon into Egypt:

The Graf Zeppelin is considered the famous airship that roamed the world east and west, and roamed over the capitals of major cities from London to Paris, Rome and New York.

The flight was scheduled to take place in March, 1929, but the British administration refused to let the balloon Graf Zeppelin descend on the land of Egypt or fly over the Suez Canal, and considered the matter a national security issue for England, not Egypt.

Nevertheless, Egypt was not completely deprived of Graf Zeppelin's trip to the cities of the East in 1929, as Zeppelin flew over Egypt without descending to its land and far from the Suez Canal. As far as I am concerned, the most important thing that happened in Zeppelin's trip in March 1929 was the existence of an Egyptian newspaper, "Al-Ahram Newspaper," which sent its own representative in Frederikshavn to raise the Egyptian flag on board the balloon, and thus ended the "Eastern Journey" of the balloon Graf Zeppelin to the cities of the East in 1929 without stopping in Egypt.

It was only two years later that the political headwinds changed a bit and in 1931 the airship Graf Zeppelin was granted permission to fly over and off our guarded land. It was a

great and resounding incident that deserved to be recorded in the history of Egypt and in the history of the important trips undertaken by Graf Zeppelin.

The demand for the Egyptian balloon flight was very high, and the Zeppelin men thought that there would be other flights to Egypt and not only this flight. One of the balloon officers stated that if that flight had been by two balloons, it would have been filled with all travelers to Egypt due to the large number of people coming to visit Egypt, especially from the Swiss.

The airship Graf Zeppelin was prepared to leave Frederikshavn for Egypt, carrying the Egyptian flag for the second time—the first was in 1929. It already flew towards Cairo and was supposed to be received at Almaza Airport. That is why the work was in full swing inside Almaza Airport. The landing of the balloon has rules and principles that must be taken into consideration in order to land safely.

At six o'clock on the morning of April 9, 1931, the airship left its headquarters in Frederickshafen, Germany, and a group of Germans bid it farewell, wishing it a peaceful return. The itinerary included passing over the cities of Lyon and Marseille, but the bad weather prevented that. The same thing was repeated with the Italian capital, Rome, which aroused the discontent of some of the balloon passengers. The balloon commander decided to take the safest and least dangerous route, and he chose the western shore of the island of Sicily. Then, he headed to the southwest towards Malta, then Benghazi, then Salloum, and from there to Alexandria, the Delta of Egypt and Cairo.

The balloon arrived at the Egyptian border more than 18 hours early, and Dr Ekner had two options. The first was to fly over the waters of the Mediterranean, and the second was to fly over Egyptian cities. Indeed, the opinion has settled on flying in the sky of Egypt all night and landing the next morning—on April 11—at Almaza Airport as was the date before.

The balloon arrived in Alexandria and flew over the western port, the Ras al-Tin Palace, the eastern port, Abu Qir, and the military airport. Thousands were waiting for it, waving and cheering to see it—happy to see this huge bird in the sky of their country. Then, the balloon headed to Cairo and flew over Ancient Egypt, Heliopolis, the Dome Palace, the Citadel, the Pyramids, the Sphinx, the Abbasid, and other important places in Cairo.

Then, it headed south, taking the River Nile as its guide, walking alongside it, and continued all night flying over the Egyptian cities until it landed the next morning in Cairo. In every city it reached, people would go out together to greet the airship and its leader and applaud it. The men of the balloon shone spotlights on the body of the balloon so that people could see it at night.

At six o'clock in the morning of April 11, 1931, cars and thousands of Egyptians gathered at Almaza Airport in Cairo at the moment of the landing of the ball from Cairo. The balloon headed to Palestine for a quick visit that lasted only hours, from which it returned to Cairo again and landed in Almaza again. Here ends the Zeppelin flight to Egypt, which took 48

hours during which the balloon traversed 4,850 kilometers, with an average speed of 105 kilometers per hour.

Second: Types of Balloons

Airships are classified into several types on the basis of several bases which are as follows:

1 - According to the material of manufacture: it is divided into three types:

A - Solid airships:

A rigid airship has a rigid frame covered with an outer skin or sheath. The interior part contains one or more gas bags, cells, or balloons to provide lift. Rigid airships are usually unpressurized and can be manufactured to almost any size.

B- Semi-rigid airships:

A semi-rigid airship has some kind of supporting hull, but the main casing is held in shape by internal pressure of the lifting gas. The airship usually has an extended, hinged girder usually running along the bottom of the casing to prevent it from twisting in the middle by distributing suspension loads in the casing; while also allowing less pressure for the envelope.

C - Non-rigid airships:

A non-rigid airship depends entirely on internal gas pressure to retain its shape in flight. Unlike the steel design, the gas casing of a non-rigid airship does not have compartments. However, they usually have smaller inner sacs or "balloons" that contain air. At sea level, balloons are filled with air. As altitude increases, lift gas expands and air is expelled from the balloons via valves to maintain hull shape to return to sea level. The process is reversed and the air is pushed back into the airships by drawing it from the engine exhaust and using auxiliary blowers.

2- According to usage:

At first, the balloons were used for two purposes: sport and scientific research. They were also used in military affairs and propaganda. The balloons are divided according to use into the following:

A - Scientific balloons:

The first scientific balloon was launched in 1803 to measure the electricity of air; its height reached 7400 m. Throughout the nineteenth and early twentieth centuries, the balloon was the only available means of studying meteorology and the atmosphere. A lot of scientists risked flying to very high altitudes to conduct their experiments.

In 1931, the Swiss physicist Auguste Piccard ascended to the stratosphere in a spherical hydrogen-filled balloon with a capacity of 14,000m³ carrying a sealed metal camera, and it reached a height of 15797m. A year later, he repeated the experiment and reached a height of 16,940m and was able to gather valuable information about cosmic rays (Fig. 1).



Figure 1: A Scientific Balloon Made of Synthetic Rubber

In 1933, two US Air Force officers flew a balloon to an altitude of 22080m to retrieve samples of air in the stratosphere. In 1960, Captain Joseph Kittinger climbed to an altitude of 31,354m, setting a record for flying in a balloon filled with helium and a new number for parachute landing. There are three types of scientific balloons:

- **A rubber balloon:** It is made of synthetic rubber and is used to measure the layers of the atmosphere. It is equipped with a radio probe to collect information about weather conditions and transmit it to the ground. The balloon is filled with gas that is lighter than air. During its ascent, it swells and the volume of the gas in it doubles 30-200 times due to the heat of the sun. Then, it explodes and is damaged, and the devices it carries with the parachute fall (Fig. 2).

- **A zero pressure balloon:** It is made of plastic (polyethylene) and is used for measuring the atmosphere through moving the balloon horizontally. The balloon is filled partially with the gas while being on land. When it is raised in the air under the rays of the sun, the gas expands and fills the cover equipped with a valve which opens automatically on reaching the required height, allowing the gas to give off; and the balloon stays at that height. The wind pushes the balloon, so it moves horizontally. During the sunset, the gas cools and shrinks; so the balloon lands unless the weights it carries are thrown (Fig. 3).



Figure 2: A Zero Pressure Balloon Used to Measure the Elements of the Atmosphere

- **A high pressure balloon:** This is a rigid, airtight, non-stretching balloon made of impermeable strips of elastomers. It is also used to measure the atmosphere horizontally. When the balloon reaches the specified height, it begins to move horizontally. Any difference in the temperature of the sun causes a change in the pressure of the gas inside the balloon, but its volume remains constant. The balloon remains at its height as long as the pressure in it is appropriate. The manufacture of this type of plastic was reached in the sixties of the twentieth century, and it became possible to keep the balloon flying for a few months (Fig. 3).



Figure 3: A High Pressure Balloon to Measure the Elements of the Atmosphere

Scientific balloons of all kinds are used daily around the world to make more than 1,000 types of measurements in the upper layers of the atmosphere such as wind speed and direction, temperatures, pressure and humidity. As for making these measurements over the oceans, high-pressure balloons equipped with global horizontal sounding techniques are used as they move with the wind and revolve around the Earth for a long period of more than a year.

B - Sports balloons: Sports balloons are used for fun, adventure and competition in contrast to scientific, commercial or military airships. The balloon sport and its festivals are still very

popular in Europe today, using hot air balloons that are safer with the use of rip-resistant nylon as a casing, and the use of a propane gas burner to heat the air. (Fig. 4).



Figure 4: Al-Bakerki Festival: The Launch of the Balloons Participating in the Al-Bakerki Festival in 2007

In both models, the burner is used to maintain altitude at night when the helium in the bag cools so that its density increases and the balloon begins to lose altitude. Thus, the hot air is used to rise, adjust altitude, ride the right wind and avoid bad weather; and when descending, it releases helium.

C - Military airships:

Airships were used in the Russian-French War (1870-1871) for monitoring by both warring parties and were used in the First World War for the same purpose and on a large scale. They were tied with ropes to the ground. If enemy planes appeared, they were quickly descending to the ground. In World War II (1939-1945), airships were used as barriers to protect London from air attacks, and they were made of thick cloth and tied with steel cables to the ground in rows at a height of 1000 meters. Japan also launched more than 9,000 paper balloons filled with hydrogen of the model fu-go (Fig. 5), each 10m in diameter, carrying incendiary bombs and equipped with a timing mechanism for dropping weights.



Figure 5: Fu-go Model Balloon

Airships were also used in the Cold War when the US Air Force launched hundreds of balloons equipped with cameras over the territory of the Soviet Union at that time. The cameras were equipped with timers to take pictures. After the camera took the picture, the balloon quickly rose and exploded in the air and the camera landed by parachute in the Pacific Ocean where it was captured by the US Navy ships. In the early 1960s, high-altitude aircraft and satellites replaced airships.

D - Navigational airships:

An airship or a navigational balloon is a lighter-than-air vessel equipped with an elongated or elliptical bag filled with gas to lift the balloon, means of propulsion consisting of engines and propellers, means for adjusting balance and suspension in the air acting as gas-releasing valves for landing, and counterweights for climbing (usually sand or water) in addition to one or two cabins for the crew, passengers and engines. The captain uses articulated vertical rudders to move the ship horizontally as well as horizontal winches to control its movement up and down.

Third: Balloon Transportation Companies in Luxor

The first flight of a flying balloon over the sky of Luxor took off in 1988, and was led by British pilots who were working for the British company "Virgin," which established the first balloon company in Egypt under the name "Ballonza over Egypt".

In the year 1994, the establishment of the first balloon company began with Egyptian funding and expertise. "Hodhud Soliman" and "Sinbad" company for flying balloons were established until the number of companies operating in flying balloon tourism in Luxor reached 8 companies, employing hundreds of Egyptians, namely "Alaska, Magic, Sinbad, Blue Bird, Hodhud Solomon, Dream, and Excellence", each of them owns dozens of balloons. The largest of which can carry 32 passengers and the smallest of which can carry only 4, while the rest of the cargo varies between 12, 20, 24 and 28 passengers.

In May 2009, the authorities decided to establish the first airport for the flying balloon on an area of 60 acres, west of Luxor (721km south of Cairo) when the Magic Horizon balloon fell recently.

The airport includes a reception hall, an observation building, a tourist service area, and offices for balloon companies equipped with the latest radar communication systems.

One of the most interesting trips that the visitor can experience is the balloon trips or what is called "in the color of the air." One of the best places where you can experience the balloon is Luxor where there are wonderful views and majestic monuments that you see from the sky and at the same time feel their large size and greatness which you will not be able to see in the best picture except from the magical balloon flights. You will also enjoy a wonderful sunrise.

According to the Federation of Balloon Companies in Luxor, Egypt is one of the leading countries in the field of flying balloons as it occupies the second place in the world after the United States of America. This is due to its stable weather and impressive landscapes such as Pharaonic temples, and the immortal Nile River that embraces mountains, and agriculture and Egyptian antiquities.

Balloon flights over the temples of the Pharaohs in the west of Luxor gained wide fame. An international balloon festival was held in Luxor which has become famous for this type of tourism, and has become the focus of the world's adventure lovers as the city hosted an international balloon festival with the participation of 41 pilots from 9 European countries.

Fourth: Balloon Trips in Luxor

1 - Itinerary of balloon flights:

The balloon flight starts in front of the Temple of Queen Hatshepsut in the western mainland. Among the archaeological sites over which the balloon passes are the Valley of the Kings and the Valley of the Queens, the Temple of Ramses II (Ramesium), and the Temple of Ramses III (Medina Habu).

In addition to the archaeological sites, the balloon passes over farmland and fields of sugar cane and wheat, which add beauty and vibrant colours to the archaeological site landscape. On occasion, the balloon crosses east of the Nile where the temples of Karnak and Luxor Temple can be seen.

2 - Balloon flights dates:

Luxor balloon companies organize balloon or balloon trips throughout the day, but they start from the early morning. The timetable of Luxor balloon flights is divided as follows:

- Sunrise time flights which start from six in the morning to ten in the morning.
- Sunset flights which start from five in the evening to seven in the evening.
- Evening flights which start from twelve noon to four in the afternoon.

The sizes of the balloon used in balloon trips vary. It can be 800 which can accommodate 30 people at most. There are other sizes such as 600, which can accommodate a maximum of 20 people. Moreover, a special balloon can also be reserved for 2 or 4 people, but the cost is higher, of course.

3- Duration of balloon flights:

As for the duration of Luxor balloon flights, it ranges from 30 to 45 minutes flying over the city of Luxor. The same duration varies according to the Luxor balloon companies

through which you will book, but the maximum duration is 45 minutes.

Before ascending to the balloon, you can enjoy watching the process of preparing the balloon for take-off as we inflate it with hot air and then watch it double in size. Then, individuals can climb into the balloon, but they are distributed and selected according to weights so as not to upset the balloon's balance.

4 - Prices for balloon flights:

In general, the prices of Luxor balloon trips range from 700 pounds to 1200 pounds. These prices vary according to the date of the balloon trips as well as the balloon company itself. In general, the morning Luxor balloon trips are the highest in price. Prices are significantly high on holidays and at the end of the year.

The following are the prices of the balloon flights in Luxor on average according to the different times of the day. These prices can be reduced or increased according to the season itself as well as according to the list price of the Luxor balloon companies themselves as follows:

- 1200 Egyptian pounds for trips that take place in the early morning, i.e. at six in the morning at sunrise until ten in the morning, which is equivalent to 75 US dollars, or 300 Saudi riyals.
- 800 Egyptian pounds for balloon trips that take place at Maghrib time, i.e. starting at six in the evening, which is equivalent to 50 US dollars, or 200 Saudi riyals.
- 700 Egyptian pounds for balloon trips that take place between three and four in the afternoon, i.e. the afternoon time of the day, which is equivalent to 45 US dollars, or 175 Saudi riyals.

Fifth: The Future of Balloon Transportation in Luxor and Its Impact on Tourism

Tourist planning contributes to the development of archaeological heritage areas and sites in order to qualify them for tourist attractions, thereby establishing sustainable tourist development projects that bring economic, social and cultural benefits at the national and local levels. This enhances the importance of tourist planning for archaeological heritage areas and sites through highlighting their historical, cultural and economic importance.

Tourist planning and its development have been linked to the emergence of tourism as a civilized phenomenon, as a socio-economic phenomenon, and as a result of the economic, social, cultural and environmental effects that resulted from intensive tourist activities, along with their great impact on the lives of societies and peoples.

Development in any of its forms means change, and it is a planned process that aims at planned change. Therefore, it is considered essentially planned change and voluntary growth, or at least it must have a certain amount of organization and control. Development usually

takes a relatively long period of time and its realization requires taking appropriate measures and means within the available capabilities and resources. The main objective of development is to meet the needs and aspirations of humanity.

In order to activate the balloon transport movement in Luxor, a set of measures have been taken, which are working to stimulate tourism there as follows:

- 1– Improving and increasing the efficiency of the airport land.
- 2 - Installing various control and lighting networks, which included the entire airport.
- 3- Carrying out the necessary maintenance before returning flights again.
- 4 - Installing a set of modern surveillance cameras globally.
- 5 - Establishing an integrated air monitoring station.
- 6 - Establishing a modern and advanced weather station.
- 7 - Periodic inspection of their workers before and after the completion of the trips.

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النقل بالمنطاد وأثره على التنمية السياحية في مدينة الأقصر

(دراسة في جغرافية النقل)

مستخلص

النقل الجوي عامة والنقل بالمنطاد خاصة لهما دور فعال في نقل الركاب والبضائع من مكان لآخر فضلاً عن توفير الجهد والوقت بصورة واضحة ، وكان اختراع المنطاد من الثورات التكنولوجية في مجال النقل الجوي والتي ساهمت بدور واضح في تنشيط حركة السياحة الداخلية للعديد من الدول .

وأحدث دخول المنطاد إلى مدينة الأقصر طفرة كبيرة في مجال التنمية السياحية من خلال مشاهد العديد من الآثار المنتشر بها من الجو أي رؤية هذه الآثار بوضعها الطبيعي ، ويستخدم العديد من الجنسيات المنطاد في مدينة الأقصر بهدف السياحة والتي تكون في الصباح الباكر أو في نهاية النهار .

الكلمات المفتاحية: النقل، المنطاد، الأقصر، التنمية السياحية، السياحة.