



AEROBAR GENERAL INFORMATION



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1. PRESENTATION

1.1. Description

Helix

Balloon

Mast

Gondola & bar

Foundations



1.2. Technical Characteristics

Dimensions

- * Overall height: 40 meters (130 feet)
- * Total ground surface area: about 100 m² (1100 sq feet)
- * Base surface area (diameter of the tower): 11 metres (36 feet)
- * Balloon diameter: 7 meters (23 feet)
- * Balloon high: 3 meters (10 feet)
- * Gondola diameter: 3,5 meters (11,5 feet)

Weight

- * Tower : 44 tons
- * Balloon : 50 kg (110 pounds)
- * Gondola & bar : 3000 kg (6600 pounds)

Performances

- * Number of seats : 15
- * Ascension height of passengers: 35 m above ground level
- * Speed: approximately 0.5 m/sec
- * Drive system power: 3 x 9 kW
- * Maximum number of cycles per hour: 12
- * Total ride time: about 5 minutes
- * Maximum wind for payload lift: 70 km/hour (44 mph)

1.3. The tower



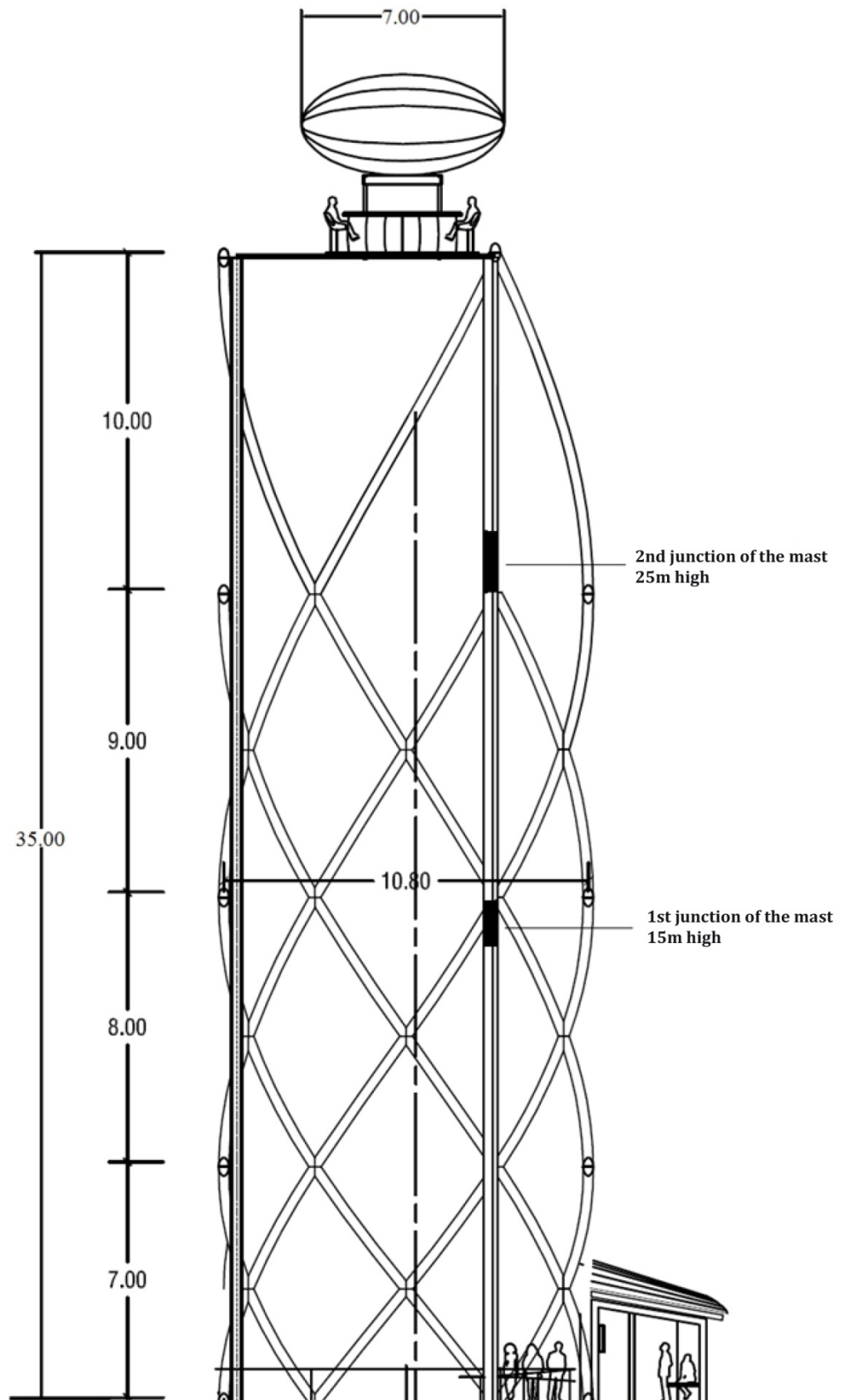
The tower is a major element of the attraction owing to its size and function.

Its contemporary design and the project's architectural aspirations, which rely on staging the bar's ascensions, reveal a festive dimension which provides an attraction for the entire site.

This 11-metre-diameter (36 feet) circular base cylinder comprises twelve helices, six of which turn clockwise and six anticlockwise, the pitch of which increases according to height in proportion to variations in load. They are linked by three vertical masts which ensure the balloon's steering system.

The transparency of the tower's lower parts allows the balloon to be completely visible both from the inside and the outside, and helps to make the attraction secure.

Therefore, the tower ensures the safe steering of the balloon whilst also ensuring that the bar remains the main star of the show.



1.4. The balloon

The envelope:



The balloon has an ellipsoid shape, 7 meters (23 feet) in diameter and 3 meters (9 feet) high. It is inflated with cold air and is seated on the structure of the bar.

An almost perfect seal is nevertheless maintained. It allows to continuously pressurize the envelope with an embedded fan, ensuring the ellipsoid shape of the ball and a maximum weather ability.

The envelope allows internal illumination on all or part of the balloon (backlight), enhancing the attraction.

The material chosen is the best compromise between:

- o Assembly
- o Sustainability (protection against UV)
- o Backlight system
- o type of feasible design (painting or print)
- o opaque or translucent colors

The bar :



A 2 meters (6 feet) in diameter bar is mounted on the three branches platform connected to the vertical rails of the tower. It is circular and has 15 seats; each seat is equipped with a seat belt.

The 15 passengers can enjoy the full panorama offered by a flight at 35 meters (115 feet) high.

Electric power supply :

The fan and lighting of the balloon is provided with on-board batteries that are recharged at night on the network.

1.5. The elevation system



Design

The Aerobar has been designed to lift the bar platform and its passengers in complete safety, accordance with standards for attractions. The elevation system is soundproofed and invisible to the public.

Elevation system

The elevation is formed of three independent carriages which slide in the shape beam attached to the main structure of the mast. Each chariot is supported by a cable that passes through a pulley at the top of each mast.

These are driven by three geared motors equipped with a static brake.

Safety

The safety coefficient on the cables complies with the applicable norms of carousels (EN13814)

In the event of a fault, a parachute system blocks the gondola.

An auxiliary generator provides the power required to lower the bar in the event of a power cut.

Performance

Its speed is 0,5 m/sec both when going up and coming down.

This permits a complete 35-metre (130 feet) high flight cycle in 5 minutes, including boarding and landing, namely 12 flights per hour, and therefore 180 passengers per hour.

Quality certification and monitoring

From the outset, the design of the Aerobar has specifically integrated compliance with the most rigorous standards for lifting passengers and receiving the public.

The standard applied is the European directive for fairground rides EN 13814 (inspired by the German standard DIN 4112).

The T.U.V. accompanied AEROPHILE during the design of the device and testing to ensure compliance and safety of the attraction.

The balloon

It is located on top of the gondola. It has a decorative role and protect from rain and sun. It is inflated by a pump located in the lower part of the balloon, fed and controlled from the platform. The pump is controlled by a pressure switch and is automatically activated when necessary to reinflate the balloon and maintain a suitable pressure.

Security

The winch is equipped with a static brake on the electric motor and a dynamic brake disc on the winch drum. Both types of brakes (static, dynamic) apply for lack of energy. Detectors overspeed, fault winding and slack in the cable trigger the emergency stop.

A safety rack is fixed in the bottom of the "C" and a latch in the carriage is applied to the rack in the event of cable breakage.

An annex generator provides power for the descent of the balloon in case of power failure.

In case of ultimate descent, the brake on the motor can be operated manually and the dynamic brake may be released gradually by a hydraulic hand pump .

The seats are equipped with seat belts. The On board Operator checks the locking belts before each flight. The belts' opening is only possible once on the ground and after validation by the on board Operator.

1.6. Internal lighting system

A lighting system is placed inside the balloon, consisting of LED. This system lights the entire balloon and highlights its potential decor.



2. USE

2.1. Operation

When in sleep mode, the system only takes a few minutes to start up. The flight manager must:

- check weather conditions;
- carry out daily checks on the equipment in accordance with the maintenance manuals supplied by AEROPHILE;
- start up the elevation system;
- conduct a test flight.

Approximately 5 minutes are required for this daily start-up.

Once the operating period has come to an end, or in the event of deterioration in weather conditions, the balloon is placed in sleep mode.

2.2. Sleep mode

Outside of operating periods, or in the event of a worsening of weather conditions, the system is placed in sleep mode.

The balloon remains on the ground and access is prohibited to the public.

The balloon is kept under pressure in order to maintain its elliptic shape and to resist gusts of wind. An electric power supply is necessary.

The balloon may also be immobilised in the upper part of the tower if wind strength is less than 70 km/hour (44 mph).

2.3. Stoppages

In the event of extended interruptions in operation or severe weather conditions, the attraction may be stopped completely.

The balloon is deflated, the site is closed to the public and the electric power supply is cut.

2.4. The effects of the climate

Although, in general, weather conditions are an essential aspect of balloon flights, the Aerobar itself is not greatly influenced by them.

2.4.1. Wind

Except in the event of extreme conditions, flights are authorised in winds up to 70 km/hour (44 mph). Above this limit, the balloon will remain in sleep mode and the attraction will be closed to the public.

In the event of winds stronger than 110 km/hour (70 mph), the balloon will be deflated as a precautionary measure to avoid any damage.

Thanks in particular to its very open design, the tower is able to resist extremely violent winds. It has been designed according to European snow and wind regulations.

2.4.2. Temperature

Upper and lower temperature limits are linked to the use of geared motors. Flights are possible within a temperature range of -20°C / +60°C (-4 F / 140 F).

2.4.3. Ultraviolet light

Ultraviolet radiation has the most energy and cause the canvas to age. The canvas used for the Aerobar is specially protected against ultraviolet light by an exterior coating.

2.4.4. Rain

The balloon may operate in rain provided that there are no electrical storms.

2.4.5. Storms/lightning

As for all buildings that tall, the Aerobar is protected by a lighting conductor. However, for safety reasons, the attraction will be closed to the public if there is a risk of storms.

2.5. Documentation and maintenance

2.5.1. Documentation :

The aeronautical experience of AEROPHILE has led to the development of detailed documentation and rigorous maintenance and operating procedures on which the Operator may rely.

This documentation also includes manufacturer certificates (release document), which ensure the quality of the equipment, and invoke the liability of AEROPHILE.

This documentation comprises:

- o The Aerobar's operating and maintenance manual: description of equipment, standard and emergency procedures, electrical, mechanical and hydraulic diagrams, regular inspections and maintenance of the tower, the elevation system and the balloon;
- o The technical installation manual outlining the recommendations for the construction of civil engineering.

2.5.2. Maintenance :

Operating and maintenance procedures are defined with precision in the documentation supplied by AEROPHILE with, in particular, maintenance manuals provided for the tower, the elevation system and the balloon.

By its design, the Aerobar requires very little maintenance. However, great rigour should be employed in the preventive checks defined for the regular inspections. The training organised by AEROPHILE also includes a module on maintenance operations.

The inspections mainly include the following operations:

- o Daily, weekly and monthly inspections may be carried out by the Operator and will include:
 - a detailed visual check of the system's parts;
 - monitoring of the proper functioning of some of the system's features;
 - monitoring of fluid levels.
- o The quarterly inspection may be carried out by the Operator or by a maintenance company trained by AEROPHILE
- o We recommend the annual inspection be carried out by AEROPHILE or by a maintenance company trained by AEROPHILE

2.6. Restrictions

The use of Aerobar is strictly prohibited when winds exceed 70km/h (43 mph).

The visitors must imperatively comply with the following instructions:

- The Aerobar is forbidden for children measuring less than 1.05 m (3,4 feet),
- Any child less than 1,20 m (3,93 feet) must be accompanied by an adult,
- Any child under 12 years old must be accompanied by an adult,
- The Aerobar is forbidden for pregnant women,
- Visitors must check that the attraction is adapted to them,
- Generally, we recommend anyone in poor health or with medical disorders not to use this attraction, because of sensations it provides, including motion sickness and vertigo,
- During family visits or group, children in all circumstances, remain under the care of their parents or guides, who must provide continuous supervision,
- It is forbidden to lean out of his seat, jumping or attempting to descend before the blackout ground,
- It is strictly forbidden to throw any object during the flight,
- It is imperative to comply with the instructions of the crew,
- Bags and personal belongings must be deposited on the ground in the bins provided for this purpose,
- Any camera must be secured with a strap,
- It is forbidden to smoke on board,
- It is forbidden to make any phone call on board,

Disabled accessibility:

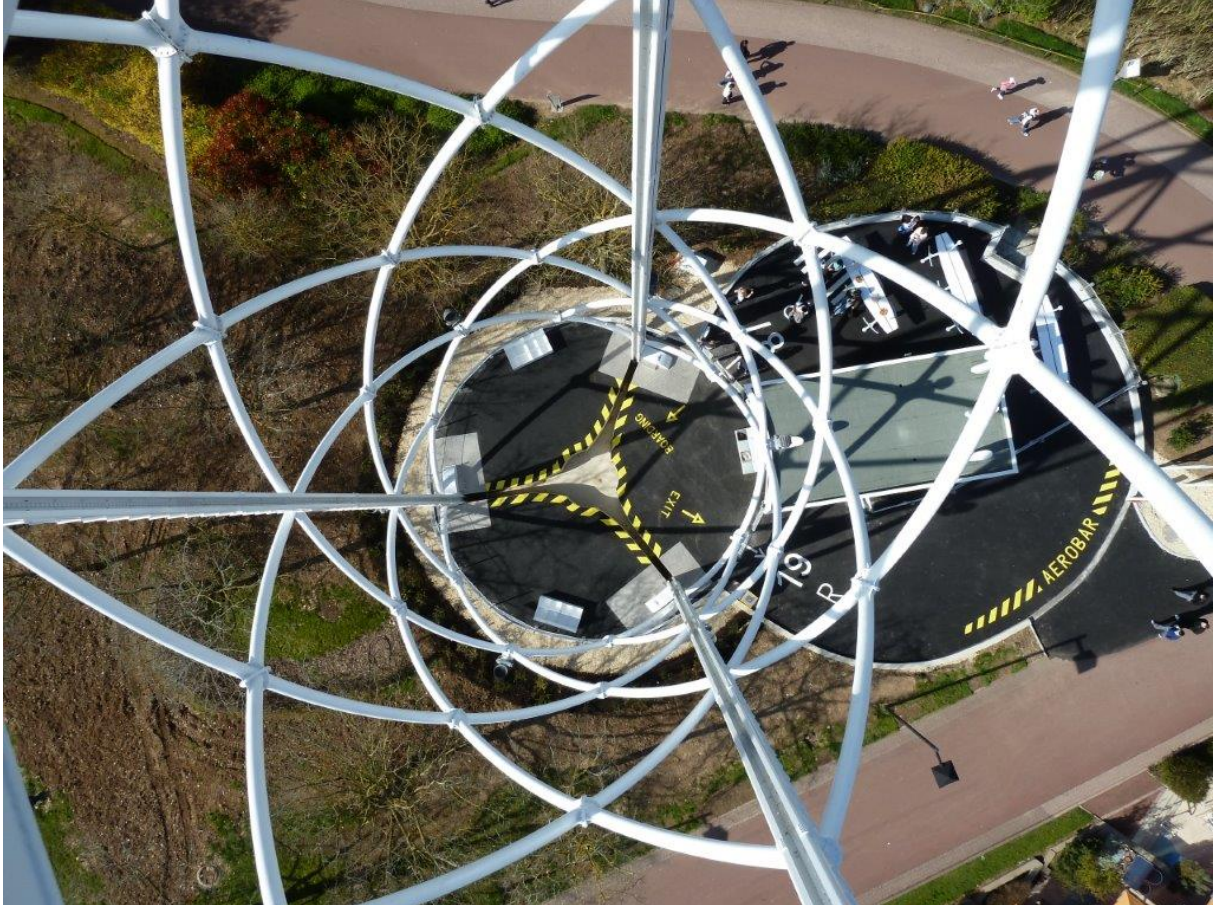
The Aerobar is accessible to people with reduced mobility:

- Respecting the size restrictions
- Can be transferred to the attraction's seat by themself
- Whose body size allows them access to the seat and proper functioning of the seat belt.

In case of severe disability (missing limb, mental impairment...), boarding is at the discretion of the Ground Operator who will ensure that the passenger is properly secured and does not expose a risk for himself and for other passengers.

3. INSTALLATION

3.1. The site requirements



The site required for setting up the Aerobar must meet the following recommendations:

- offer a 12 metre (43 feet) in diameter of free space for the AEROBAR, and a space of 15 metre (49 feet) in diameter for facilities specific to the operation of the balloon (technical room, sales counter, waiting area ...)
- be level.

It should be noted that the assembly and dismantling of the attraction requires additional free space.

3.2. Infrastructure work

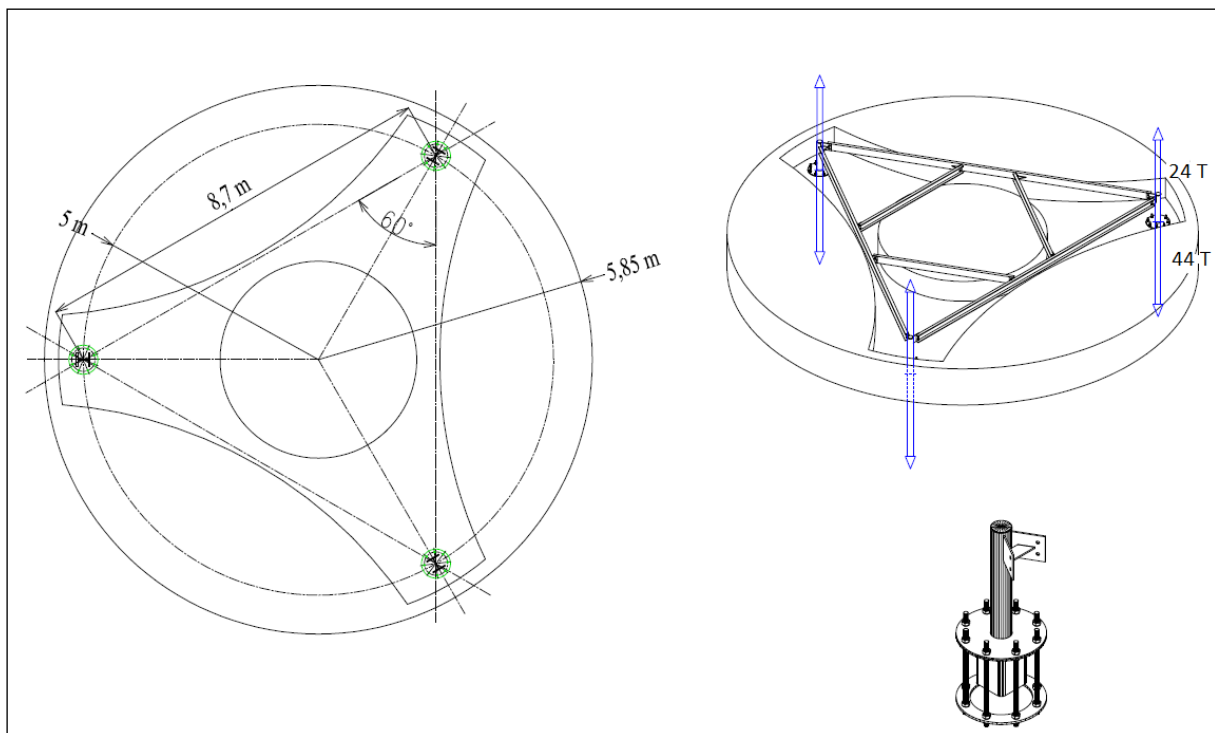
➤ Foundations

The foundations required for the installation of the Aerobar are essential for the support and security of the tower.

The foundations comprise 3 driven or cast piles and concrete or metal headers. They have to be defined according to the very characteristics of the ground. Each of the 3 piles must be able to carry a maximal load of 24 tons upward and 44 tons downward.

Foot print

Load



➤ Power supply :

The general system required is European standard 30 kW: 3 phases + neutral 400 V, 50 Hz (other electrical standards should be checked with AEROPHILE).

3.3. Assembly

The elements which make up the tower are mainly 15 to 19 metre (50 feet to 62 feet) long masts and curved bars (tubes). Partial pre-assembly on the ground is necessary before installing on the tower.

➤ Location :

An area of approximately 400 m² (4 300 sq feet) is required for assembling the tower. Assembly variations may be studied for specific sites.

➤ **Assembly :**

Assembly requires a crane (45 tons) and a boom lift.

➤ **Timing**

6 to 8 weeks are required for the complete installation of the Aerobar with a team of 4 people.

A series of tests is carried out and the installation is validated by the control bureau before the attraction is opened to the public.

4. AUTHORISATION

The Aerobar, listed as a fairground ride, was designed so as to be able to be dismantled. Nevertheless, its installation may require a building permit.

After acceptance by the control bureau, the attraction may be subject to a control examination by a safety commission before it is opened to the public.

5. PATENTS

AEROPHILE holds an international patent No. 1262501 for the Aerobar.

The purchase of an Aerobar includes a licence for the use of this patent.

6. COMMERCIAL OPERATION

6.1. Attraction for the General Public



6.1.1. Perception of the Aerobar

The Aerobar is the same height as a 11-storey building. The visible diameter of the balloon is equivalent to that of the Moon at a distance of approximately one kilometre. Therefore, it is visible from several kilometres away, especially at night-time when it is lit up. Visitors are naturally drawn to the foot of this giant totem

6.1.2. The queue line

An area must be set aside for the organization of the queue line in front of the sales counter.

6.1.3. The sales counter (not included)

Gradually, customers approach the counter, where the Ground Operator can provide information about consumptions and flight procedures. He has at its disposal various products (drinks, sandwiches ...) for sale. He serves every customer, equipped the drinks of the fall-arrest system. The average transaction time is less than one minute. Payment is made by credit card or in cash. Clients are informed of the waiting time.

6.1.4. The balloon flight

Once the gondola has been immobilised on the ground, the passengers from the previous flight disembark and the on board Operator supervises the boarding of passengers for the next flight. After ensuring the locking of the safety systems, he authorises a new flight. The number of passengers boarding is limited to a maximum of 15.

The Aerobar stops at the top and the passengers admire the view from a height of 35 metres (130 feet), the feet in the sky. After few minutes in a stationary state, the Aerobar begins its descent. The balloon lands, passengers disembark.

6.1.5. Total duration of the ride

In total, and without having to wait, visitors enjoy a fifteen-minute attraction from the moment they bought the token to the moment they leave the attraction.

6.2. The advertising board

6.2.1. Personalization

The balloon can be customized with painting, stickers or banners.

6.2.2. The backlight

At night, the balloon is lit up, thus increasing visibility up to several kilometres.

6.3. The Totem

6.3.1. Lighting up the structure

The structure may also receive different types of lighting (strobe lights, projects, LED, etc.), which, in particular, highlight the structure's forms



6.4. The events tool

6.4.1. The personalization of the attraction

The Aerobar may be completely redecorated in the colours of the product to be promoted, not just the envelope, but also the ground, the pavilion, etc.

6.4.2. Samples and vouchers

At the entrance or the exit, depending on the product, samples and vouchers for the products being promoted may be offered.

6.4.3. Privatisation and specific operations

Conversely, in the event of the purchase of a given product and on presentation of a receipt, an advertiser may offer all its customers a balloon flight by completely or partially privatising the attraction.

6.5. Other revenue

6.5.1. Drinks - snacks

The Ground Operator sells drinks (alcoholic or non-alcoholic), ice cream, snacks...

6.5.2. Souvenirs

In some cases, it may also be possible to sell by-products such as souvenirs.

6.5.3. Souvenirs Photos

An automatic system for photographing visitors at the top may be installed and offered to them on their return to land. The family photo at 35 metres (130 feet) up in the air!

6.6. Staff

6.6.1. The control unit

The attraction works with two operators:

- A Ground Operator who controls the access to the attraction and, if necessary, perform emergency operation to bring back down the passengers.
- An On board Operator who controls the ascents and take the passengers aboard the gondola.

The two operators must be able to join each other at any time, for example by walkie-talkie.

6.6.2. Reception of the public

The public is welcomed and supervised on the ground by the Ground Operator who sells tickets and ensures the safety of the ride.

After embarking passengers and checked the seat belt locks, the On board Operator goes in the center of the gondola and ensures the control of the attraction with a radio control.

He validates that all passengers are properly secured with a push button and gives the order to climb. The gondola takes off the ground.

Once the gondola down, the On board Operator unlocks the safety belts and the passengers are allowed to get off the tower.

6.6.3. Other missions

The operator is also in charge of closing the attraction and switching it to sleep or stop mode. He checks that the weather conditions are favourable. He may be required to carry out emergency operations: deflate the balloon, emergency descent, etc.

6.6.4. Training and qualification

The training is delivered by AEROPHILE.

6.7. Operating costs

6.7.1. Staff

See 6.6.

6.7.2. Insurance

The Aerobar is considered as a ride (fairground equipment) of fifteen seats and is guaranteed as such in Public Liability and damage.

6.7.3. Other costs

The other costs include all the general costs required for this type of attraction (electricity, maintenance, supplies, fees, telephone, bank, taxes, rent, etc.).

7. AEROBAR BUSINESS MODEL

REVENUES		
Average ticket with drink	<i>7,50€ with 250 pax/day</i>	685 000,00 €
TOTAL		685 000,00 €
EXPENSES		
Insurance		9 000,00 €
Maintenance		11 000,00 €
Employees	2	75 000,00 €
Electricity		7 500,00 €
Others	<i>telephone, taxes</i>	15 000,00 €
Drinks	<i>0,80€ / pax</i>	73 000,00 €
TOTAL		190 500,00 €
CASH FLOW		
Gross Operating Profit		494 500,00 €

8. AEROPHILE GROUP REFERENCES

The Aerobar was designed and developed by AEROPHILE, designer, maker and operator of large tethered gas balloons since 1993.

8.1 The Aerobar of the Futuroscope



The first Aerobar installed in April 2013 at the Futuroscope Park (The second largest amusement park in France, 1.6 million visitors per year), has been a great success. The drink is mandatory and the price varies from 6,50 € (soft) to 11€ (champagne). The capture rate is about 7% on individuals visitors with 50 000 passengers in 2014 and an average expenditure of 7,50 €.

The Futuroscope has chosen the Aerobar as a symbol of its campaign in the Parisian subway during summer 2014.

8.2 The Aerobar of the Parc du Petit Prince

Installed in July 2014, the Aerobar of the parc du Petit Prince is access free and the drink is not mandatory. The average expenditure is approximately 1 € per visitor.



9. COMMERCIAL PROPOSAL

AEROBAR PROPOSAL, 40M HIGH

1. TOWER

Metallic tower of the AEROBAR: 40 m high 350,000 €

2. FLYING BAR

125,000 €

- 15-seater gondola including circular bar
- Balloon cover
- Pressure system
- Internal lighting

3. ELEVATION SYSTEM FOR 40M TOWER HIGH

320,000 €

- 3x9 kW geared motors with 3 chariots and cables
- Emergency auxiliary generator
- Guide pulley
- Control cabinets

4. SERVICES

1. International pending extension Patent n°1262501 and architect's fees included
2. One year guarantee

TOTAL

795,000 €

5. CONDITIONS

1. Payment methods:
 - 30% when ordering,
 - 30% when the major parts are built by letter of credit,
 - 40% at departure from factory by letter of credit.
2. Price valid until March 31st, 2015
3. Ex factory price excluding tax (Incoterm EXW).
4. Not included: civil engineering, foundations and assembly of the tower