

# Safety Investigation Report

Ref. AAIU-2015-17  
Issue date: 21 June 2017  
Status: Final

## SYNOPSIS

<b>Classification:</b>	Serious incident
<b>Level of investigation:</b>	Standard
<b>Date and time:</b>	29 December 2015 at 13:30 UTC
<b>Aircraft:</b>	Cameron Hot Air Balloon A-210, msn 10828.
<b>Owner:</b>	Private
<b>Accident location:</b>	On the central market square ('Grote Markt') of Sint Niklaas, Belgium N 51° 09' 52" – E 004° 08' 25"
<b>Type of flight:</b>	Commercial
<b>Phase:</b>	Take-off
<b>Persons on board:</b>	1 pilot + 8 passengers + 1 stowaway
<b>Injuries:</b>	None

## Abstract

Two hot air balloons from the same company were taking off from the central market square of Sint-Niklaas city in Belgium. Upon take-off of the biggest one, owing to the wind force, the ground crew was required to hold the basket down.

The ground crew of one of the balloons were tending the basket. A by-stander seemingly giving a hand, eventually held on to one of the basket mounts when the balloon took off.

The ground crew tried to force the person to jump from the basket, by shouting and trying to grasp his legs.

The balloon took off with the person hanging on the outside of the basket, eventually, climbing on board, with the help of passengers.

No one was injured in the process.

The person was brought back to the police station of Sint-Niklaas after the flight. The person was speaking only Arabic, and none of the local language.

## FACTUAL INFORMATION

### History of the flight



Figure 1

A couple of balloons were taking off from the central market square of the Sint-Niklaas city in Belgium. Upon take-off, owing to the wind force, the ground crew was required to hold the basket down.

From a video shot during the event (see pictures), some by-standers were present in the close vicinity of the balloon, outside the dedicated area (the wooden boardwalk). It is unclear whether the balloon crew required the help of by-standers to hold on the basket.

The person (stowaway) is visible on the picture, without that any action from the flight crew, ground crew or launch master is visible to remove him from the basket before the take-off.



Figure 2

One of the ground crew members tried to force the person (stowaway) to jump from the basket, by shouting and trying to grasp his legs.

The balloon took off with the person hanging on the outside of the basket, eventually, climbing on board, with the help of passengers.

No one was injured in the process.

The person was brought back to the police station of Sint Niklaas, after the flight. The person was speaking only Arabic, and none of the local languages.



Figure 3

## Damage

There was no damage

## Pilot information

Male, aged 71.

Holder of a hot air balloon commercial pilot licence, issued by BCAA first issued in July 1985, valid until 02 January 2017.

## Meteorological information

Wind direction: 010 degrees

Wind speed: 8 kts

Temperature: 12°C

QNH: 1025 hPa

### Airfield information

The launch field holds as cadastral designation 'Grote Markt', Sint-Niklaas and is property of the city. The Belgian Civil Aviation Authority (BCAA) has issued authorization LAA-POR/JVL/2013-1531 in 2013 to use the square as a permanent launch area to the local authorities who are entitled as the operator.

Dimensions: 165 m x 75 m x 60 m x 140 m  
Reference point: 51° 09'52"N 004° 08'25"  
Elevation : 69 ft (AMSL)  
Surface : brick

Prior permission of the operator is required to take-off from the market square. Every balloonist who wants to take-off from the launch field, shall have at least 50 hours of flight time as pilot in command of manned air balloons.



Figure 4: aerial view (Google Earth) of the market square

The authorization mentions 4 names of people who are responsible for the safety on the ground.

3. Conditions for the use of the airfield:

3.2. The police regulation regarding the use of the event area "Grote Markt" Sint Niklaas as a permanent launch field for manned balloon must be strictly complied with.

3.3. The operator must take all necessary actions to ensure the safety and public order on the take-off area.

3.5. If by one or another circumstance the technical conditions concerning manned air balloons (CIR/GDF-07) are no longer fulfilled, the operator shall without delay inform the BCAA hereof.

3.12 The operator is responsible for:

3.12.2 the avoidance that the safety of the launch field is impaired by the presence of persons, material or objects which may form an obstacle for the movements of manned balloons.

3.12.3 the prevention of the public from being endangered during the launch of the balloons and for taking the necessary measures here for.

Besides the authorization there are also the circular GDF-07 and the local police regulation;

- Circulaire /omzendbrief GDF-07; definition of conditions required for the organisation of air shows involving manned free balloons<sup>1</sup>.
- Police regulation regarding the use of the event area 'Grote Markt' as a permanent launch field for manned balloons.

Extracts of GDF-07

5.3. Conditions for the take-off area;

g) The take-off area shall be surrounded by uninterrupted crowd control barriers. Existing concrete fences, uninterrupted, and whose height is identical to those of crowd control barriers are also authorized. Barricade tape may not be used as a substitute.

5.4. Safety of by-standers

b) A steward service, when needed reinforced by police, ensures the safety of by-standers, monitors them and prevent them to access the area reserved for the pilots and the organisation.

c) The take-off area shall be marked off in such a way that by-standers may not approach at a distance less than 3 meters from a deployed hot air balloon,( ...)

<sup>1</sup> An air show involving manned free balloons is defined as every activity performed by one or more free manned balloons during one or more days with as purpose to achieve a demonstration or recreational program that is planned and that is made public on beforehand

Extracts of the police regulation:

Article 9: the airfield commander and his deputies

They are visually recognizable (e.g. hi-vis jacket) and carry a badge with photo.

Article 10: responsibilities of the airfield commander and his deputies

- Supervises, together with the PIC and his crew, the safety of the public during take-off. In particular, he makes sure that the public located in the immediate vicinity of the balloon, remains on the wooden boardwalk.
- Has the authority to forbid the PIC to take-off when the safety of the public cannot be guaranteed.
- Will request the support of the police when the public does not comply to his orders and that the situation is considered dangerous for the take-off of balloons or the public.

Article 11: responsibilities of the PIC

The PIC ensures he is carrying the required certificates. He must also ensure he is in possession of the police regulation concerning the use of the market square as a permanent take-off field.

As long as the balloon has not left the ground, the PIC shall comply with the instructions given by the airfield commander and his deputies. From the moment the balloon has left the ground, the responsibility of the flight reverts to the PIC

The PIC and his crew ensure, together with the airfield commander and his deputies, that the public in the immediate vicinity of the balloon remains on the wooden boardwalk.

## ANALYSIS

It's not clear what the intentions of the person actually were; to help holding the basket down or to stow away on the balloon. For sure he deliberately kept hanging on the basket, he wasn't stuck or entangled in something. However, he didn't come out of nothing neither, he was already assisting in holding the basket down for some time, without any briefing or without anyone sending him away from the launch area.

Although both the authorization and the police regulation clearly state the different responsibilities, the launching seems a bit chaotically in reality. The airfield commander was not clearly recognizable and more assisting than supervising. Several by-standers were helping, not belonging to the passengers and not clear if briefed for it.

On the other hand, considering the big launch field (see figure 4), which is moreover a public place, it is impossible for the balloon crew and one commander to keep every passer-by on the wooden boardwalk without any fence. The authorization refers to circular GDF-07, only applicable for air shows with balloons, which imposes that a take-off area shall be surrounded with crowd control barriers.

## CONCLUSIONS

### Findings

- The pilot held a valid license since 1985
- The intentions of the person could not be cleared up
- The supervision on the launch area was not sufficient
- It's not feasible to keep the general public on the wooden boardwalk without any fence, the square is a public place.

### Cause

A person neither belonging to the passengers, nor to the crew deliberately kept hanging on the basket during the launch of the hot air balloon.

### Contributing factors:

- The person not speaking one of the local languages
- Inadequate supervision and adherence to the existing regulations

## SAFETY ACTIONS AND RECOMMENDATIONS

### Safety actions by the field commanders

After the incident, the field commanders proposed a list of possible improvements to the existing procedures and regulation. Some proposed measures:

- Crew and pilot should clearly recognizable as a member of the balloon team, possibly with hi-vis jacket
- Only the vehicle(s) used for the anchoring are allowed on the launch field. All other vehicles shall use the public parking spots
- The pilot shall appoint a crew member (chief crew) responsible to keep non-authorized persons on a determined distance from the time of inflation till the time that the hot air balloon has took off.
- Pilot and/or chief crew shall keep the public on a sufficient distance and shall preferably position themselves during the inflation of the balloon.
- The pilot shall ensure that only the authorized crew members are holding the basket down.

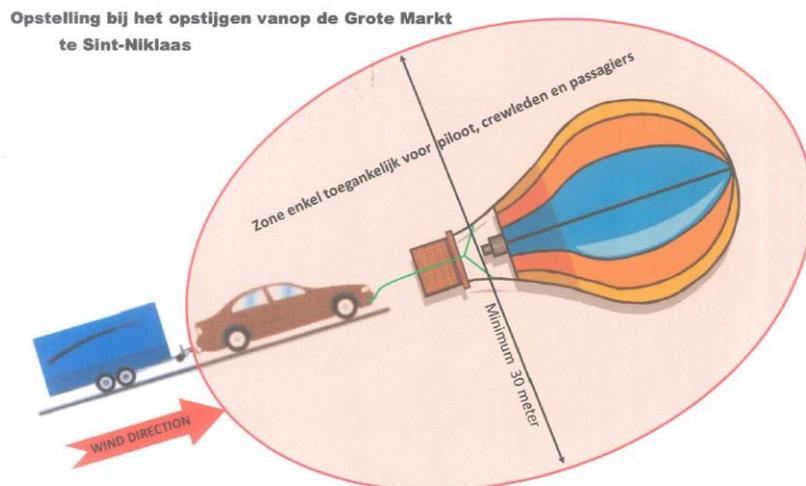


Figure 5: proposed zone around the balloon

AAIU(Be) supports the intention to implement this proposed measures in the existing police regulation. However, keeping the public on a certain distance remains the main responsibility of the operator and thus its field commanders, as stated in Article 10 of the current police regulation. Therefore;

### Safety recommendation

#### Safety issue: current police regulation not specific enough

Restricting the public access to the large wooden boardwalk may not be an easy task when only a limited area of the market square is used for the launch of one or two hot air balloons. It would be more clear for both the public and the supervising field commander if a zone around the hot air balloon is clearly marked out. This could be done with pliable safety cones for example. They are easy to place and to remove and every citizen recognizes it from traffic zones or accident scenes. Because they are pliable, they form no dangerous obstacle in case the balloon drifts off.

It was also noticed that the field commander was not visually recognizable (as requested by the police regulation) and that he also was assisting during the launch. He should have clear authority

to both the balloon crew and by-standers and wear a hi-vis jacket with the title of his function written on it.

Therefore;

#### **Safety Recommendation BE-2017-13**

It is recommended that the local authorities of Sint-Niklaas together with the local police amend further the police regulation pertaining to the use of the event area 'Grote Markt' as a permanent launch field for manned balloons, in particular to enforce both the responsibility and authority of the field commanders and to include the requirement to clearly mark the zone which unauthorized persons are not allowed to enter.

#### **About this report**

*As per Annex 13 and EU regulation EU 996/2010, each safety investigation shall be concluded with a report in a form appropriate to the type and seriousness of the accident and serious incident. For this occurrence, a limited-scope, fact-gathering investigation and analysis was conducted in order to produce a short summary report.*

*It is not the purpose of the Air Accident Investigation Unit to apportion blame or liability. The sole objective of the investigation and the reports produced is the determination of the causes, and, where appropriate define recommendations in order to prevent future accidents and incidents.*