Ukkel

1 Introduction

Sunday the 30th of August 2008 was a lovely summer's day. It was a sunny afternoon and I was home, outside in my yard when my phone rang. My good friend Hein was on the line. He had heard on the radio that there had been an accident in Brussels. Two firefighters had lost their lives fighting a fire in Ukkel.

In this article I would like to tell the tale of Ukkel. I've reconstructed this tale based on different testimonies of people who were there on the fire ground. Several of these people have read this text and have been able to offer remarks. Everything that's is correct and true in this article, is thanks to these people. Anything that may not be 100% accurate, is my responsibility alone.

Figure 1 Lieutenant* Patrick Batselier (left) and corporal Alain Tacquenière (right) lost their lives while fighting a fire in Ukkel.

*Ranks have been converted into US ranks in this article for clarity.

After hanging up the phone, my first thought was, "Which company was on duty today?" I myself am active in the 10th company, that is on duty every four days. However, chief officers in Brussels only work half their time in 24h shifts and the other half in 8h day shifts. This means that only once every eight days, they are on a 24h shift. "How well do I know the possible victims?" I turned out that the 40th company was doing their shift that day. After a few more phone calls, I had two names: Patrick Batselier and Alain Tacquenière. Patrick was well known to me. He had been one of my instructors in the Technical Rope Rescue Team. Alain, on the other hand, I did not know. Both men were very experienced firefighters. Immediately, I drove to Brussels. For the remainder of the shift, I assumed the role of 1st battalion chief. In the evening, I listened to the people telling their story.

Such an incident is a very sensitive one. Losing our own, is a huge tragedy for the service. I've deliberately waited this long to write about it, but now I feel the time is right to do so. The goal of this article is to allow for everyone to learn from this tragedy.

2 The events

The 112 emergency call center received a call at around 14h42 for a fire in Ukkel. The standard response for a building fire is dispatched: 2 engines, 2 ladder trucks, one command vehicle and an ambulance. The first vehicles are approaching from the Dieweg road. This was the address that was passed on with the initial alarm. Later it would turn out that St-Job's road was much closer to the incident.

The area between the Dieweg road and the St-Job's road had several buildings on it located in groups. It was a relatively large terrain with a strong slope because the Dieweg road is situated a lot higher than the St-Job's road. The slope is so steep that a hairpin bend has been built in front of the buildings. The slope will turn out to be crucial in this incident. It hinders assessment and size up of the incident.

The size of the terrain causes the distance between the two roads and the place where the vehicles set up, to be very large as well. The vehicles that arrived from the Dieweg road had to drive for about 250 m from the road up to the burning building. Coming from the St-Job's road, it was only 150 m, but that wasn't clear from the start.

Upon arrival around 14h48, crews of Chenaie fire station are faced with a fully developed fire in one building. It's a rather large building. Afterwards it turns out that the building is 40 meters long and 14 meters wide.

Figure 2 Areal picture taken after the fire. The upper street is the Dieweg road. The bottom is the St-Job's road. The empty site with the hairpin bend below it, can be clearly seen at the bottom right of the picture. *(Photo: Google maps)*

The building is part of large complex made up of three abandoned buildings which are built in the shape of a U. Figure 3 clearly shows these three buildings. Aside from the buildings themselves, Figure 3 also clearly shows the slope on which the complex is built. The far left building is designated as building A and was fully involved upon arrival of the fire service. The building that's located parallel to building A is designated building B. This building was slightly larger than A measuring about 45 m. The width was the same at 14 m. At the time of arrival, this building had not yet been affected by the fire. There was no smoke in building B. The area between both buildings used to be a yard or patio. At the back end of the yard, there was another building. This is building C which measured 16 x 13 m. At the side where the road ran next to the yard, a covered walkway further enclosed the yard. This walkway allowed people to travel between buildings A and

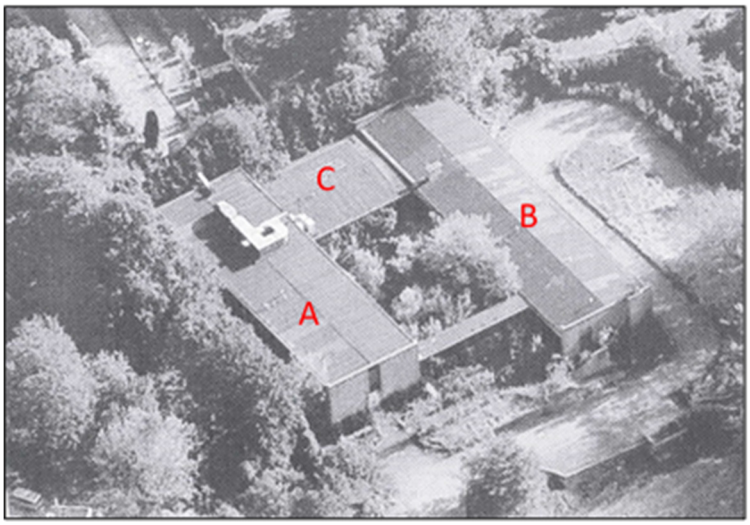

Figure 3 The buildings before the fire. From left to right: A, C and B. The overgrown yard is clearly visible. *(Photo: unknown)*

B in rainy weather without getting wet. The yard formed by the three buildings and the walkway had a surface area of 432 m².

All of the buildings had been abandoned for several years. The yard between buildings A and B was completely overgrown. The original plants had grown into trees. Figure 3 clearly shows the trees and bushes. The yard has become as small forest with trees and plants reaching up to 15 m.

Figure 4 Picture taken at 15u32. Building A is hidden from view behind the smoke. The captain of Helihaven has just exited building B after the smoke explosion occurred. When the fire crews arrived 40 minutes earlier, building B seemed to be completely unaffected. *(Photo: Robert Decock)*

Fire crews are faced with a fully developed fire in building A. Also, this fire has spread into the yard between the two buildings. So there is a forest fire raging that is the size of the yard. This combined fire (building A and forest) is producing a tremendous amount of smoke. This smoke makes it impossible to get a good view of the situation. It is clear to everyone on the fire ground though, that building A has been lost to the fire. At this point, building B is a severe exposure risk due to the flames. Because of both the large amount of smoke and the high vegetation in the patio, it isn't clear to fire crews that there's another building in the back (building C). Everyone has the same idea that building A and B are two distinct buildings that are completely separated. The company officer of Chenaie engine (the station closest to the incident), ordered a Ø 45 mm attack line to be set up in order to fight the fire in building A. When the vehicles of the main station arrive, the chief officer decides to set up a Ø 70 mm attack line on the corner of building B and the walkway. This hose line can be used to attack the fire in the yard between the two buildings. He also does an interior size up of building B. The building is made up of offices on two sides of a central corridor (see Figure 5). Access to this building is through an exterior staircase. Inside the building there are also two staircases leading to the floor below.

The officer finds no signs of fire inside building B. The building seems to be completely unaffected by the fire. He also notices that the windows at the side of the patio are open. The glass panes are all gone. This is in stark contrast to what's been done on the other side of the building. There, the windows are boarded up using concrete formwork plywood. Opposite to what is usually the case with boarded windows, the plywood is screwed into the wall instead of nailed. This has been done both on the ground floor as well as on the first floor (see Figure 11).

The officer decides to set up an extra Ø 45 mm attack line in one of the offices. After all, this is an ideal place to tackle the fire in the yard. The combined power of the Ø 70 mm on the corner of building B and the Ø 45 mm inside the office should be enough to stop the fire in the yard (see Figure 5). There is an extra advantage to this setup. The crew on the Ø 70 mm hose can cover the escape of the crew inside. Should anything happen inside, they would be able to simply step out through the window. They'd only have to

walk for about 20 meters to the left to reach the other crew. This means that the officer had considered a second escape route.

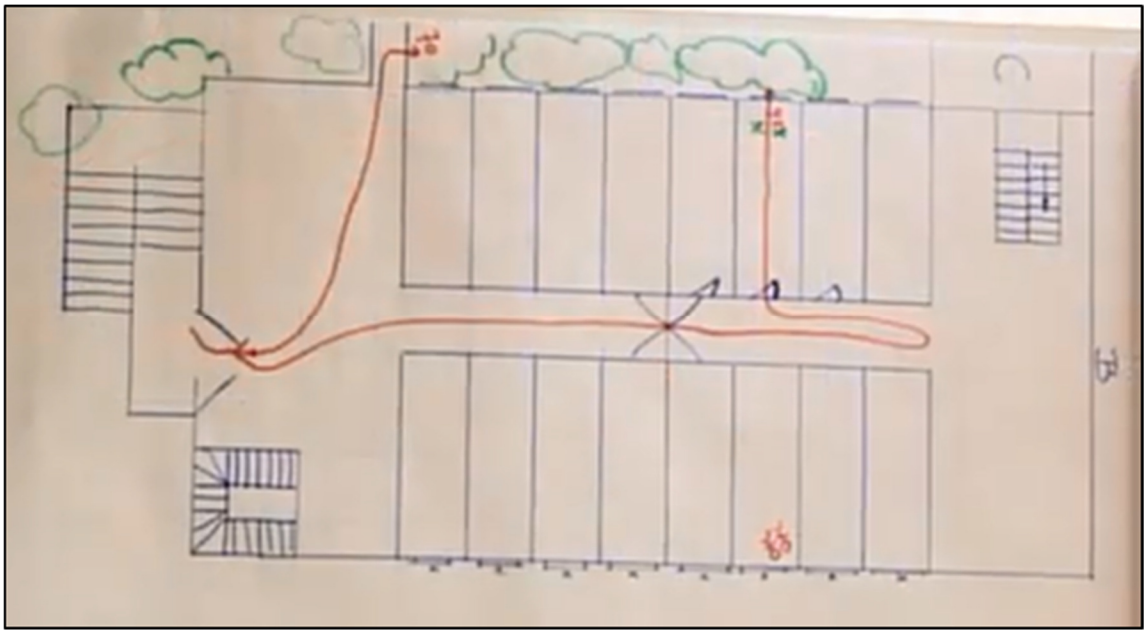

Figure 5 Layout of building B. The hose lines are drawn in red. The Ø 70 mm on the left and the Ø 45 mm on the right. The two blue, vertical lines next to the Ø 70 mm are the beginning of the covered walkway. In the middle of the central corridor there's a double door. *(Drawing: Bert Vandeneynde, copied from [3])*

The crews stretch the hose lines necessary for water supply. Several attack lines are deployed as well: 2 x Ø 70 mm, 1 x Ø 45 mm and 1 high pressure booster line. Next to that, one ladder truck is set up for an elevated water monitor. The second ladder truck can't be used this way due to insufficient water supply.

The IC asks lieutenant Batselier to stretch the 45 mm line inside the building. Normally, this is a two man job. However, lieutenant Batselier's crew is busy doubling the water supply line. Since the ladder truck of Anderlecht station is not being used at the moment, corporal Tacquenière is asked to team up with lieutenant Batselier. They go on to set up the Ø 45 mm attack line.

The IC again inspects building B and gets word from lieutenant Batselier that the hose line is connected and ready to be charged. At that time, there is a wispy thin smoke inside. It's assumed that this smoke is coming from the fire in the yard and is being pushed inward. Lieutenant Batselier asks for a fan to be placed, so the smoke can be vented. However, the amount of smoke is rather limited so that there's not really a need to wear a breathing apparatus.

When the IC comes out of the building a moment later, the captain reports that the water supply is ready. This means that the Anderlecht station ladder truck can now also be used for extinguishment. The IC asks a probationary battalion chief to go in and take the place of the ladder truck operator (cpl. Tacquenière) at lieutenant Batselier's side. Then he asks the captain to set up a fan.

The probationary battalion chief goes into the building. The IC had noticed little to no smoke upon exiting the building but the probationary officer is faced with entirely different conditions. She's able to advance easily in the first section of the building because there is hardly any smoke. However, as soon as she passes the double door (see Figure 5), the smoke layer suddenly drops and she is forced to follow the hose line by touch. She continues to follow the hose line towards the duo. She describes an event which causes a lot of debris to fall down. Shortly after, a second event causes temperature inside to become very hot. She can hear lieutenant Batselier and corporal. Tacquenière communicating. It seems there trying to get out themselves. She's able to hunker down behind the wall next to the staircase on the right (see Figure 5). She then calls out a mayday which is heard by everyone on the fire ground. It's 15h28.

Since the probationary battalion chief was the only woman on the fire ground, everyone immediately knew who was in trouble. The crew manning the Ø 70 mm hose line, stopped flowing water and started looking for her. However, they had initially laid out their hose line in perfect visibility. Now, they have to work their way through heavy smoke. Initially they try to find the central hallway. While doing that, they end up in the staircase that was located to the right of the entrance on Figure 5.

Meanwhile, the captain of Helihaven has also entered the building. Helihaven is the name of the main fire station. Together with a younger colleague, he follows the hose line into the building to help lieutenant Batselier. They were unaware of the fact that the probationary battalion chief was also inside the building. Shortly after passing the double door, they lose touch with the hose line. A lot of debris has fallen onto the hose line. The younger firefighter asks the captain to take the lead. When switching positions, the captain stands up and feels immense heat through his turnout gear coming from the smoke layer. Because of the intense radiant heat, the thick black smoke and the muffled sound, he decides to retreat outside. It's too hot to go on.

Figure 6 The side view of building B. All windows have been boarded up except for one. The probationary officer escapes the building through this opening. *(Photo: Robert Decock)*

During the retreat, he can hear the mayday of the probationary battalion chief. He also hooks up with the lieutenant (of the de Ø 70 mm hose line) who has now found his way to the corridor and who wants to go in with his nozzle man to help his colleagues in trouble. Eventually the four firemen go back outside together through the main entrance and decide to try to help through another way.

The probationary officer realizes she is running out of time and staying hunkered down is not an option. She sees a sign indicating an exit and crawls towards the staircase. The staircase has been barricaded, but she manages to drop herself down into it. On the floor below, she sees light. She moves towards the light and finds a single window that hasn't been boarded up. Through this window, she finds a way out to safety and so survives the tragedy.

The attempts to rescue the two other firemen, all fail one by one. Firemen Batselier and Tacquenière lose their lives in very tragic circumstances. Lieutenant Batselier is severely hit on the head by collapsing building debris. Cpl Tacquenière drags him across the corridor to the other side of the building. There his escape is blocked by the boarded windows (see Figure 6). In a final effort, he tried to break down the boards. This action was seen from the outside. Figure 6 also shows firemen desperately trying to cool the window with water. Afterwards, the two deceased colleagues were found at this location.

3 Hypothesis: Smoke explosion

After the incident, it wasn't immediately clear what had happened. Every fire department has average firefighters, poor firefighters and exceptional firefighters. The people fulfilling key roles in the Ukkel incident, are to be considered a dream team. The officer commanding the incident, the captain of helihaven and lieutenant Batselier himself are all held in high regard at the fire service of Brussels.

The hypothesis I pose is the following:

Buildings A, B and C are all connected. The buildings have roofs which are slightly pitched. Smoke was able to spread from building A, through building C into the void ceiling space of building B. The space above the false ceiling, was completely separated from the floor below. This had been done with plaster boards attached to a frame work. Probably, the ceiling would have maintained structural integrity for 30 minutes in the case of a fire. Therefor the goal of this ceiling was to stop a fire in the office from getting into the space above the ceiling. This form of protection was designed to work from the bottom up. However, the spread of smoke inside the void space above the ceiling could occur unhindered. Insulation had been placed on top of the plaster boards in the form of mineral wool. It's therefor likely that the crews did not realize there was a void space above them. Also, any smoke gathering inside the void space was impossible to notice for the crews working on the floor below.

The fire in building A was fully developed. Still, it produced an enormous amount of smoke. Part of the smoke rose vertically and another part ended up in the void space above the ceiling of building C. From here, the smoke spread further into the void space underneath the roof along the entire building complex (see Figure 7). Building C was connected to building B by a portal. The smoke likely moved from building C to building B through the void space of the portal.

At some point in time, an ignition occurred in building A. This ignition caused a smoke explosion. A smoke explosion is a fire gas ignition of an almost ideal mixture of smoke and air. Ignition of such a mixture causes significant pressure waves.

During several interviews after the incident, the ladder truck operator located up high in the ladder basket, indicated he had seen the fire spreading from building A onto building B. He sent out a radio message to report this, but the message was not received by anyone on the fire ground. There are several possible explanations for this (low battery, different channel, another radio blocking communication, …). In the end, the exact cause of the problem could not be determined. The exact time at which the ladder truck operator noticed the fire spreading however, was clear. The ladder truck operator said he

saw the probationary battalion chief entering the building. He also flowed water at her in order to warn her.

Figure 7 The fire in building A causes smoke to build up here (upper left drawing). Smoke concentration increases as does the temperature of the smoke. The smoke is forced into the void space of building C. Once there, the smoke will again start to build up (upper right drawing). After some time, the void space underneath the roof of building B also fills up with smoke (bottom right drawing). All of the void spaces are now filled with a mixture of smoke and the air that was already there. *(Figure: [3])*

The operator testifies that next, the roof was lifted up slightly and the side walls of building B collapsed. The escape route of the team manning the Ø 45 mm line was now cut off. The force needed to lift the roof, suggests a smoke explosion happened. First a pressure wave moves through the mixture of air and fire gas towards building B. Shortly after, the wave is followed by flames. This means that downstream of the ignition, two events occur. First the pressure wave, which is powerful enough to cause the (partial) collapse of the ceiling. And quickly after that, the flames which in turn causes everything to catch fire. Temperature inside will then increase rapidly. The difference between conditions before the occurrence of the flame front and after, should be clearly noticeable.

These two phases in this specific configuration which are caused by a smoke explosion, could explain the two phenomena the probationary officer described.

A second hypothesis has been offered by the captain who was also present on the fire ground. He states that the roof covering was made of bitumen. Bitumen are known to

produce flammable gases when heated. These gases could have built up in the void space and acted as fuel for the event which occurred.

Of course, these are no more than hypotheses which try to explain what happened. Without scientific study with e.g. full scale testing, it's very hard to confirm or refute these hypotheses.

4 Important factors

There are several important factors which have all contributed to his outcome. The most important ones are briefly discussed below. In an article such as this, there is not enough room to go into full detail.

4.1 Size up

The size up on the fire ground proved to be extremely difficult. The buildings were situated on a steep slope. The ground floor of building A was on the same level as the first floor of building B. Access to building B was through an exterior staircase. Crews ended up on the first floor. For crews deployed on the outside down the slope, this floor was the first floor. This type of confusion is detrimental to getting an accurate picture of the fire ground. Buildings that have a different number of floors are dangerously confusing as it is. In the past, there have been several fatal accidents in such structures (e.g. Cherry Road).

Figure 8 View of the front of the building. Notice the staircase that provides access to the upper floor level. Also take note of the rectangular shape of the brick wall. Behind this wall, there's a pitched roof hidden from view. *(Photo: Robert Decock)*

The difference in height also made that people at the bottom along the longer wall (with boarded windows), did not have a good view on the situation. From down there, it wasn't clear that the buildings had a pitched roof (see Figure 6). The rectangular walls at the front reinforced this impression.

Because of the topography, it was also impossible to perform a 360° size up of the building. The fire in building A made it impossible to pass between the burning building and the fence. It was also very difficult to pass at the back of the building complex.

These two elements, the difference in height and not being able to perform a 360° size up, need to be "added" to the enormous smoke production and the overgrown patio. It was impossible, using the known methods of that time, to make a good assessment of the fire scene.

All of these elements together, led to most crews on the scene thinking they were fighting a fire in building A, a building that was not connected to building B. Lieutenant

Batselier and corporal Tacquenière were, in their minds, performing an exterior attack on building A from an adjacent building. This was after all, the best position to fight that fire.

A smoke explosion, like the one that happened, would not have been possible if the two buildings had been separated from each other. In that way, inaccurate size up was the most important factor.

4.2 Water supply

The water supply was another factor which influenced the incident. Upon arrival, firefighters faced a fully developed fire raging over an area surface of 560 m² and a *forest fire* of 432 m². This is a total area surface of nearly 1000 m² that is on fire. The amount of water needed to deal with this fire, was not immediately available.

The officer requested a higher alarm level. In the fire department of Brussels, a water tender is not a standard addition to a regular building fire alarm. Two water tenders each carrying 8000 liters were requested as well as an extra engine to help set up supply lines.

It took about 15 minutes before an adequate water supply was available. This is a rather large time frame which is unusual for the Brussels fire service. The large distance between the location of the different vehicles and the hydrants, led to very long lengths of hose lines. Next to that, the height difference caused extra pressure losses which required some lines to be doubled.

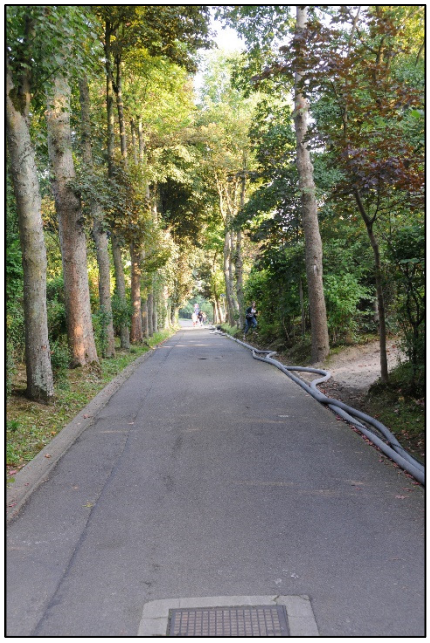

Figure 9 The water supply line going from the hydrant to the engine was exceptionally long. *(Photo: Robert Decock)*

Suppose the necessary flow rate would have been available 10 minutes earlier. This would mean that the fire would not be able to progress unhindered for such a long time. Maybe the fire would not have been able to provide the necessary smoke for a smoke explosion. Maybe there would not have been enough energy left to cause an ignition of the gas mixture. These questions remain unanswered, but it's plausible that an earlier attack with sufficient flow rate would have had a positive effect on the fire.

4.3 Type of construction

The fire in Ukkel happened in an abandoned building. Inside the building however, there was a large fire load present. Much larger than one would expect in an abandoned building. Parts of buildings A and C were used by a professional house painter/decorator as storage rooms. A large amount of jars of paint and other flammable building materials were stored there.

The type of construction used for this particular building in Ukkel is very rare by Belgian standards. Belgium tends to house more solid buildings. Bricks and concrete are standard here. The advantage of such buildings is that they have a high resistance to fire. In a

fully developed fire, they don't collapse any time soon. A very large force is required to move the load bearing walls or floors.

Figure 10 Top down view on to the burnt down buildings B and C. In both buildings, the concrete and steel structure is still intact. The wooden structure above it has burned down completely. On the rectangular wall of building B there's still a charred imprint visible of the trusses that supported the roof. This gives an idea of the volume between the roof and the false ceiling. This picture also shows the trees behind the building, as well as the fence. Because of these, a 360° size up during the incident was impossible.
(Photo: unknown)

In Ukkel, each building had the bottom floor made out of concrete and steel. On top of this, a light weight wooden construction was placed. Such type of construction is very common in the US. They are characterized by a very low fire resistance. When exposed to any decent fire, they collapse rather quickly. On top of this, a pressure wave will do a lot more damage. After all, such type of construction weighs very little.

An additional issue was that the roof of building B was barely fastened to the supporting walls at all. The walls carrying the roof, stayed in place by the weight of it. The roof was therefore very important for maintaining structural stability. The original blueprints of the building indicated a prefabricated roof structure made out of metal was to be placed. In reality however, a prefab wooden structure was used. This is a very important change to the building. The metal trusses would have been stronger and heavier than the wooden structure. Aside from that, it needs saying that the wooden trusses added to the fire load. This would not have been the case with a metal structure.

The smoke explosion produced a pressure wave. This pressure wave lifted the roof and pushed the wall outwards. When the overpressure subsides a second later, the roof falls back down. And now it is no longer supported by a wall which in turn causes part of the structure to collapse. This collapse is what killed lieutenant Batselier. So in that regard, the type of construction is an important factor in the outcome of the incident.

Figure 11 View of the side wall of building B. The wooden boards sealing off the windows are clearly visible. At the far end, crews are doing a rescue attempt from the ladder basket. *(Photo: Robert Decock)*

Another aspect that's specific for this fire ground, is that the fire was raging in an abandoned building. All of the windows in the outer wall were boarded shut (except

for a single window on the bottom floor). The plywood boards used on the windows are also used to build molds for concrete form work. This means that the boards are very sturdy.

As soon as crews saw one of the boards moving, the location of the crew in trouble was known. Firefighters tried to remove the boards. This had to be done from the basket of the ladder truck. Crews on the outside had to overcome an additional disadvantage: the ladder was set up and placed ideally for extinguishment, but not for reaching and forcing that specific window panel. Next, it turned out that the boards weren't nailed but screwed into the wall. On all the windows of the top floor, even double boards had been used with mineral wool insulation stuffed in between. From the basket of the ladder truck, firefighters desperately tried to remove the boards (see Figure 11). All help would eventually come too late. It quickly became clear for the people manning the ladder, that their rescue efforts had been unsuccessful.

5 Lessons to be learned

After the tragedy, technical debriefings were set up. The department licked its wounds and tried to draw lessons from what had happened. Below I will outline what the most important lessons of Ukkel were, according to my own opinion. Therefor the following section is *based* on my own views and experience.

5.1 Ladder truck as a watch tower

The most important lesson of the Ukkel incident is the potential of the ladder truck to help in the size up. More often than not, a ladder truck operator can see things from high up that can't be seen from the ground.

The ladder operator needs to ask himself the following question: "What can I see, that my colleagues on the ground can't?" Next he will need to share that information.

In doing this, he can provide the IC with crucial information. The IC can then adjust his own view of the situation if needed. Finally he can alter his tactical choices based on new intelligence.

5.2 More hose in the vehicles

Brussels is an urban area with an average population density of over 7000 people per km². In some areas this numbers rises to 24 000 p/km². It goes without saying that water supply is not a problem in such an area. After all, all of the people living there require water. This means that waterworks usually consist of large diameter pipes which are working under higher pressure than one would expect in a rural area. Ukkel however, is one of the wealthier areas of Brussels. This means that fewer people live there. The water pipes are smaller in diameter and have lower pressure. Because of both the low pressure of the water hydrant and the slope of the terrain, the water supply hose line needed to be doubled in order to provide sufficient flow.

The first engine on scene could not stretch out a water supply line. There was not enough hose line in the vehicle for this. The change of the regular fire engine into a multi

functional engine had caused that now there were fewer hoses in the vehicle than before. Space in the engine had to be made for the technical rescue and extrication tools. It's also very rare that a supply line of that length has to be laid out. The hose reel at the back of the ladder truck could have been used, but again its length is limited.

After the incident, the length of ladder hose reel was increased. Also the number of hoses in the engine was increased. The recent change into the use of coiled packs, cassettes and hoses in zig zag, allows for a higher total of hose line to be put in each vehicle. On top of this, these type of hose line configurations are more suited for quickly stretching out long lines as opposed to classic rolled up hose lines.

5.3 Procedure "abandoned buildings"

In several fire department abroad there is a specific procedure for fighting fires in abandoned buildings. One of the things that has to be paid attention to, are windows that have been boarded up. When fighting fires, we always operate under the assumption that we have two separate escape routes for crews. The normal entry point of the building is the first route of escape. The second escape route in low or middle high buildings, is through the windows. The idea behind this is that we can flee towards a window when things go bad. Our colleagues outside will then evacuate us using a ladder.

When the windows are boarded shut, this assumption is no longer correct. In that case, we only have a single escape route left. This signifies a decreased level of safety. A procedure "abandoned buildings" will have a crew specifically tasked with opening up windows. As soon as it's clear that the fire service is dealing with an abandoned building, that additional crew is deployed. Often this crew has some extra technical equipment for this task. If needed, an extra ladder truck is dispatched. Several windows will then be opened back up, and their location forwarded to the interior crews. In the case of Ukkel, this specific action could have made a big difference. The smoke explosion happened about 40 minutes after the arrival of the first engine. In hindsight, there probably was enough time to remove a few boards beforehand and provide a way out for corporal Tacquenière.

5.4 Organization of the fire service during and after the incident

An incident in which one of our own perishes, is very disruptive for the organization of the fire service. The colleagues closest to those involved in a fatal incident are devastated. This is a perfectly normal reaction to an abnormal situation.

There are two things that are very important at that time: First of all, everyone directly involved with the incident is in title to decent supportive measures. Aside from that, the fire service must also continue to perform its duty towards the population.

Supporting shaken colleagues is a very difficult subject. Some are no longer capable at that time to perform their duty. Others insist they finish their shift and are even offended/hurt when they are relieved of duty. Some if these firemen are capable of continuing their shift. But some aren't. This makes it a very delicate issue.

Fortunately, the fire service of Brussels has a very high level of solidarity amongst its members. When such an incident happens, a lot of firefighters spontaneously report in at

the fire station to help. This proved to be true again just recently when during the terrorist attacks of 22 March, suddenly 300 firefighters were out to help instead of the normal 150.

Having enough people at the fire station is important for the immediate support of crews. Everyone has to have the option of being relieved. Some will require gentle urging to take a step back. In our department, most people opted to finish their shift inside the fire house. After all, it's easier to talk about these things with fellow firefighters than with our families. Family members at home can easily sympathize with what has happened, but often they don't really understand the full impact of the events.

The Brussels Fire Department is based on a network of fire stations as is the case in all current fire zones. In case of a fire, chief officers are always dispatched from the main station. This means that during the weekend, there are no chief officers present in the other stations and some smaller stations rarely get to see an chief officer at all. The main station can be seen as the central nerve system of emergency services in Brussels. The downside is that during such a crisis, the other stations don't get the proper support that they need. During the incident and afterwards during handling of the aftermath, seven out of eight stations of Brussels Fire Department had been on scene with one or more vehicles. In each of those stations, there may have been colleagues which required some form of support. To adequately take care of this, there should have been a chief officer in each of those stations to offer support and to communicate with the main station.

Our people work in a 24h shift system in which they work for one day and are home the next three days. Four days after the tragedy, they have to start their next shift. For a lot of people, it's not that easy to ride out again to the next fire. The first fire after Ukkel however, went flawless.

During that first shift afterwards, there was a debriefing under guidance of Eric De Soir. He is the reference in the field of crisis support for emergency services. The first shift after the attacks of 22 March, he was also present with a team to help and support our colleagues. Eric does a fantastic job together with his team. Any extra guidance and supportive measures, can be discussed with them as well. It's very important that the fire service is prepared to take care of any expense this might create (and that they clearly communicate this to the staff). Firefighters go to extreme lengths for other people. When something goes very wrong for them, it's up to society to stand by them and help them as well as possible.

Figure 12 Erik De Soir was instrumental in the support of our colleagues.

6 Closing remarks

This article is dedicated to lieutenant Batselier, corporal Tacquenière and all of the firefighters involved that day. I already stated above that on that day, a dream team was on scene in Ukkel. A combination of highly competent people was there on the fire

ground. I have worked closely in the past with lieutenant Batselier and I still work alongside the chief officer who commanded the incident and the captain who stood by him. They are some of the most skillful firefighters I know. A thought that came to many a mind after Ukkel was: *If it can happen to them, then I don't even stand a chance.*

With today's knowledge, this fire might have had a different outcome. It's very important to realize that much of that knowledge was not as readily available 8 years ago. It's also very easy to look back a say what other people should have done differently. That is not the goal of this article.

We paid a terrible price that day. I hope, from the bottom of my heart, that we learn from this. A lot of people learned many different things that day. It's also important that organizations learn these lessons. Otherwise the knowledge will vanish with the crews that have learned them. Learning from incidents, it's not something we do well in Belgium. Let's change that together. Step by step…

7 Bibliography

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