

Management of Expectations in Tunnel Safety

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INTRODUCTION

How can the emergency services together with the local government create a tunnel, which makes a safe rescue operation in case of an emergency possible? That is the challenge The Hague County Fire Department faces in various tunnel projects. The commander of The Hague County Fire Department has a dual position, also being the independent tunnel safety advisor. Based on the national and international regulations The Hague County Fire Department developed its own approach, where risk management, process management and management of expectations are the key factors.

CITY AND COUNTY OF THE HAGUE

The county of The Hague is an urban area, which is located at the west coast of the Netherlands. The territory consists of nine municipalities of which The Hague is the largest and most well known. The city hosts the royal residence, the national government and is internationally well-known as the 'International City of Peace and Justice' with all the international tribunals and embassies as well as Eurojust and Europol. Besides that, The Hague is also a tourist spot: Especially the beaches at Scheveningen are a popular holiday destination. On a regular day, there are about one million people in the county of The Hague.

The Hague has a geographically enclosed position due to the Northsea at the west, highways and rural areas at the east and other cities (like Rotterdam) at the north and south. The enclosed position in combination with the high population density makes traffic infrastructure a problematic focus in the area. This results in long queues every day, which cost society lots of time, money and frustration. Besides that, it's a risk: it enlarges the risk for a traffic incident and it lowers the possibility for emergency services to reach other parts of the area in case of an incident. To solve this problem the local, regional and national government started several tunnel projects over the last years:

Sytwende and Hubertus tunnels: four road tunnels of together 3500 meters, that are part of the new bypass around the city (completed between 2003 and 2009)

Koningstunnel: 750 meters long roadtunnel under the central station of The Hague and some buildings of the national governmental (completed in 2000 and will be revised in 2014)

Trekvliettracé: 2000 meters long roadtunnel, which should create a new entrance to the city centre (to be completed in 2016)

A4 Midden Delfland: roadtunnel of a few kilometres as a new connection between The Hague and Rotterdam (to be completed in 2016)

The government also develops some light and heavy railway tunnels to improve the accessibility of the region

THE HAGUE COUNTY EMERGENCY SERVICES

In the Netherlands exist 25 regional fire departments, which are a cooperation of several municipal fire brigades. The Hague County Fire Department is an example of governmental and operational cooperation of nine municipalities. Risk management is centrally organised and is performed by approximately 10 professionals. For now, the focus will be on tunnel safety in road tunnels from an

emergency point of view. This is a multi disciplinary approach, since the fire department works closely together with other emergency services like the police and the ambulance service. These services are also regional organised like the fire department.

PROCESS MANAGEMENT

The regular safety approach in the Netherlands is based on the “safety chain”: risk management, incident management (preparedness, response), recovery. Actually, this is a too simple presentation. Risk management can't be separated from incident management. Risk management isn't just a link in the chain. It's also a process approach throughout the entire “safety chain”. Keywords for this approach are relation management, network management and account management. During the start-up of a project this is of much more importance than professional knowledge.

The emergency services operate in a complex network of various parties with different interests. This does not only relate to tunnel projects, but also other infrastructural or spatial development projects. In these projects basically the same approach is used: Safety Effect Report. It is a flexible instrument without legal status that focuses on the process of cooperation. The integral approach services the interests of all participants transparently and promotes an optimal mix of safety solutions.

RISK MANAGEMENT AND TUNNEL SAFETY

During the development phase of a tunnel, risk management should be handled by the emergency services from an incident management point of view. The main focus should be on three aspects:

Attainability: Can we get there safely and in time with the necessary equipment?

Operational control: Can we control the incident?

Self support: Can the people get away safely and in time?

These three aspects should be checked for various incident scenario's. Therefore, a scenario analysis is a very important tool for the emergency services. This results in performance requirements, which can be transformed to functional requirements. This answers the question: Which facilities are necessary to control the various incident scenario's? Facilities include technical installations in and around the tunnel, operational equipment as well as behavioural and organisational aspects. All the facilities together (integral) should improve the attainability, operational control and self support. Of course, every scenario is related to a certain chance. From an emergency point of view the chance is less important than the effect of an incident. This can be at odds with the developers: Emergency services use a deterministic approach while the spatial planners use a probabilistic approach.

POSITION, ROLE AND RESPONSIBILITY OF THE EMERGENCY SERVICES

It's necessary to have a clear understanding of your own position, role and responsibility. The emergency services give an advice about “feasibility of the safety level”, while the municipal administration decides about “acceptability of the safety level”. As it is said: “You will get the level of safety, what you are willing to pay for”. It's the responsibility of the municipal administration (political) to decide about the accepted level of safety. It's important not to confuse those two roles during the process. It's tough for an emergency service to accept that the safety level is lower than what is wished for. This can be the result of the political balance between costs and risks. During this process it's crucial to manage the expectations of the municipal administration: “Which risk are you willing to take, since we can't control every incident if the facilities in and around the tunnel are insufficient?”

DISCUSSION

In the presentation the focus will be on the balance between feasibility and acceptability of the safety level. It can be discussed how to manage this balance: management of expectations.

REFERENCES

Safety Effect Report, for users, Centre of Crime Prevention and Safety and Security, 2009