COORDINATION WITH EMERGENCY SERVICES / EFFECTIVE EMERGENCY RESPONSE PLAN

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Abstract

"Emergency services" can be defined as all local services, whether public or private, including tunnel and non-tunnel staff, which would intervene in the event of an incident. Safety in tunnels requires effective incident management and training of emergency services.

The safety officer, a formerly missing link between tunnel-management and emergency services, coordinates the safety measures and ensures effective emergency services action and enhancement of communication between all authorities involved.

A modern ERP - Emergency Response Plan, should comprise of a clear concise graphic layout, providing condensed information for each party involved. Respective scenarios and exact positions and locations of the intervention sites must be indicated in a compressed form.

1. INTRODUCTION

For many years, it was believed that tunnel safety depended primarily on the degree of technical equipment. Subsequent catastrophes in Alpine tunnels were strong lessons highlighting many other potential weaknesses in the safety chain.

Tunnel safety includes numerous measures including a modern ERP - Emergency Response Plan, specific tactical concepts and training for emergency services, efficient incident management by the tunnel control centre and emergency services dispatching, improved communication between different emergency services such as the police, fire-brigades and rescue teams and also the provision of relevant information for tunnel users on how best behaviour within tunnels.

Safety measures should enable those involved in incidents to rescue themselves and ensure efficient and effective action from the professional rescue teams and emergency services.

Luxembourg’s tunnels are highly equipped, improvements brought about by the Directive 2004/54/CE relate mainly to the organization of tunnel-management and emergency services.

The following information highlights the importance of coordination between the tunnel-management and emergency services and gives an overview of the new concept of Luxembourgish ERP.

2. BASIC FORMATION FOR FIRE-FIGHTERS

It is essential that fire-fighters receive information about the particular boundary conditions of tunnel fires. The following topics should be included in a education plan: fire load and power, spatial and temporal sequence of a tunnel fire, mission targets and priorities, behaviour of fumes, risks for fire-fighters, critical velocity, back layering, chimney effect, tunnel ventilation performance limits, reaction of tunnel-structure, tactics etc. Other topics may include effective management of accidents in tunnels with or without traffic jam inside the tunnel!
3. THE SAFETY OFFICER, THE MISSING LINK

The safety officer’s mission is described in article 6 of the directive 2004/54/CE on minimum safety requirements for tunnels in the Trans-European Road Network.

In the past, the cooperation between tunnel-management (TM) and the emergency services (ES) was normally limited to the phase before commissioning a new tunnel.

Today, the Safety officer’s task of tunnel safety organisation includes:

- continuous ensuring of coordination between TM and ES,
- taking part in the preparation of operational schemes (also of emergency services),
- taking part in the planning, implementation and evaluation of emergency operations,
- taking part in the organisation of joint periodic exercises for tunnel staff and ES,
- taking part in initial training for the scenario "fire in tunnel" (tunnel staff and ES).

Training for tunnel staff and ES is a preventive measure, and the Safety officer is the “coordinator of all preventive and safeguards measures to ensure the safety of users and operational staff” (→ article 6, Directive 2004/54/CE).

Previously the important task of ES training was omitted; today however the Safety officer has to ensure that appropriate initial and continuous training is carried out, not only for ES but also for tunnel staff.

The Safety officer also has the task of promoting a continuous dialogue between the tunnel-management and the emergency services; he thus becomes the missing link between all those involved in tunnel safety.

The Safety officer acts as a consultant to all parties involved in incident management, helping to create operational schemes and emergency response plans, and constantly improving knowledge and performance of all persons involved in incident management.

4. HOW BEST TO STRUCTURE A MODERN AND EFFICIENT EMERGENCY RESPONSE PLAN?

Traditional emergency response documents were often so long and laborious that they enticed few to study them at the outset. It was also often difficult to identify the general concept and to comprehend the subtle differences between the various scenarios and approaches. This makes it almost impossible for the emergency services to use the plan in preparation for a mission.

In a traditional plan, it was often not possible to source basic instructions with sufficient speed; thus rendering the ERP fairly useless during an emergency. This outdated approach made no distinction between the different tunnel tubes and certainly took no account of the exact location of the incident inside the tunnel. The precise location of an incident is often essential. Example: A traffic jam in front of an accident makes it impossible for the ambulance to get through in order to arrive beside the victims. Due to the local conditions it is also not possible for the ambulance to use the crossover between the two tunnel tubes (in order to arrive from the opposite direction to the accident).

A traditional plan (as described above) is therefore no real help for the emergency services, not to deal with a tunnel disaster and not even to prepare for the worst.
A modern emergency response plan differs not only between the two tunnel tubes but even considers the exact position of an incident in order to consider local conditions like inexisten
crossover, height differences between two directions, traffic jam inside the tunnel etc..
Such a plan provides also different instructions for different groups of interveners.

Examples:
• Fire-fighters instructions depend on whether a fire brigade approaches from one or the
  other tunnel portals;
• the instructions of the tunnel operators depends on which side the accident has happened.

In a modern emergency response plan, group-oriented “Operation Guidelines” are provided
giving an overview of the intervention procedures needed for tunnel operators, fire-fighters,
police and emergency service control centre. The procedures are based on an elaborated
graphic concept, are visually appealing (see picture 1), and not overloaded with text.

A modern emergency response plan is not only helpful in case of a tunnel disaster but also
useful for the different stakeholders in preparing for all type of incidents.

![Picture 1]

5. OUTLOOK
The most important information within an emergency response plan (ERP), is to explain the
best way that the emergency services should intervene.
The key to a successful intervention is speed; to get as early as possible to the incident.

Conclusion: We need a procedure that ensures that the fire-fighters receive detailed informa-
tion about the best way to intervene, even before they arrived at the tunnel and before they
took a look at the ERP.
The rescue teams need before they arrive on site answers to the 3 W-questions:
  - What happened? Where it happened?
  - Where must I go to do my job?