



Fire Protection and Safety in Tunnels 2019

'BRINGING ALL TUNNEL EXPERTS TOGETHER TO INNOVATE IN TUNNEL PLANNING, CONSTRUCTION AND OPERATION TO ENSURING SAFETY ON ROADS, METRO AND UNDERGROUND NETWORKS'

VALUE FROM ATTENDING

Over 20 presenters will join us from across Europe and beyond to share insight on tunnel safety, to include the more interesting and leading projects.

The conference days will also be full of networking opportunities allowing attendees to share their experiences on a one-to-one basis. It will also enable delegates the chance to explore the latest technologies the industry has to offer, guaranteeing greater safety provisions are in place to minimize.

After many years in Norway, the Fire Protection and Safety Tunnels is moving to the fantastic city of Copenhagen in order to continue achieving a pan-European audience

2019 SPEAKING FACULTY

George Kafantaris, Technical & Design Director, **CMT Copenhagen Metro**

Gert-Jan Ransijn, System Integration Manager, **Amsterdam Metro**

Raffaele Zurlo, Chief Executive Officer, **Brenner Base Tunnel**

Jakob Böttger, Team leader Planning and deployment fire brigade, **BLS**

Stephen Fowler, Head of Health and Safety UK, **Eurotunnel**

Rana Ilgaz, Head of Profession Highways and Traffic, **TfL**

Mark Gilbey, Tunnel Systems Lead, **High Speed Two**

Ian Parkhouse, Fire and Rescue Service Liaison Manager, **High Speed Two**

Petros Papagiannakis, Chief Executive Officer, **LFP**

Marc Viñas Buxeda, Responsible for the Catenary Energy system and Tunnel Equipment unit, **LFP**

Benjamin Truchot, Head of Fire and Dispersion Department, **Ineris**

Raf Derhaeg, Tunnel Safety Supervisor, **Infrabel**

Marius Raddum, Inspector of Accidents, **Accident Investigation Board Norway**

Tony Cash, International President, **Rail Industry Fire Association**

Michael Halwachs, Head of Tunnel Security, **PORR group**

Maria Marton, Expert on Road Infrastructure and Tunnel Safety, **Swedish Transport Agency**

Richie Cahill, Safety Officer, **Boliden**

Samuel Backman, Development Engineer Health & Safety, **Boliden**

Aurelio Rojo Garrido, President, **APICI**



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CONSTRUCTION FOCUS DAY - 17TH SEPTEMBER 2019

THE CONSTRUCTION FOCUS DAY WILL LOOK AT THE CONSTRUCTION STAGE OF TUNNELING ON AN INTERACTIVE LEVEL WITH WORKSHOPS TO PROVOKE DISCUSSION AND NETWORK WITH INDUSTRY EXPERTS AND VISIT A REAL LIFE TUNNEL-SITE.

12:30 **REGISTRATION & REFRESHMENTS**

13:15 **CHAIR'S OPENING REMARKS**

13:30 **Improving collaborative working to deliver fire safety on High Speed Two**

- Key facets of the HS2 network
- Understanding the regulative framework fire railway fire safety in the UK
- Ensuring fire and rescue service approvals for UK transport infrastructure and exploring fire and rescue services principles
- Developing a consultation framework to ensure collaboration between different stakeholders
- Managing and delivering QDRs
- Key fire safety features on HS2: highlighting resistant materials used and integrated passive systems
- Developing a combined ventilation and intervention strategy
- Collaborating to develop ventilation and shaft designs

Mark Gilbey, Tunnel Systems Lead, High Speed Two

Ian Parkhouse, Fire and Rescue Service Liaison Manager, High Speed Two

14:30 **Case Study: Fire protection and safety in long tunnel: What should be done differently?**

- Highlighting the importance for designers to work closely with tunnel owners and fire brigades to integrate evacuation routes and adequate signage
- Exploring what resistant materials have been integrated at the stage of construction to lower risk of fire
- Following-up on 2018's presentation: Highlighting the reason behind the 300m distance between the by passes in Brenner Base Tunnel
- Shedding lights on the ongoing work and organisation within the tunnel to achieve security of the technician during the construction phase

Ivan Baroncioni, Director, Brenner Base Tunnel

15:30 **Close of Construction Workshop**

16:00 **Site Visit to the Sydhaven New Metro Line in Copenhagen**

Delegates will have the opportunity to visit the EBR/ØVK worksite and explore the latest development in this tunnel build. The excavation site is in a built up residential area and attendees to observe this launch site and learn more about the project

18:00 **Return to Conference Venue**



Fire Protection and Safety in Tunnels 2019

PROGRAMME DAY 1 - 18TH SEPTEMBER 2019

08:00 **REGISTRATION & REFRESHMENTS**

08:30 **CHAIR'S OPENING REMARKS**

08:45 **Discovering Fire Protection & Safety in the New Copenhagen Cityringen Metro**

- Highlighting the features of the Cityringen Metro line in operation
- Uncovering fire safety requirements to understand how to better construct your underground infrastructure against fire
- Exploring the key fire related systems design implemented in the new line
- Unveiling implemented compliance and innovation: compartmentation, fire alarm and firefighting services

George Kafantaris, Technical & Design Director, CMT Copenhagen Metro

09:15 **PEOPLE BINGO**



The perfect chance to network and meet your peers. In this session, delegates will all be assigned a number and tasked to find 3 other numbers in the room, ask them their name and top challenge and reason for attending the conference.

09:30 **Debating the pros and cons of automatic controls for tunnel safety: should you predetermine incident or react case by case?**

- Reviewing available technologies for automatic incident detection and which ones are the most adapted to your tunnel: from sensors to movement detection
- Exploring how to use predetermined and archived accident to respond quickly to an incident
- Highlighting challenges related to the identification of the smoke source and how to take this into account in automatic controls
- Exploring the role of system integrators to ensure your technology is interoperable and ready to use
- Questioning how to handle water mist and ventilation when a fire is detected automatically to quickly protect your passengers and your infrastructure

Raf Derhaeg, Tunnel Safety Supervisor, Infrabel

10:00 **Session Reserved for Aero-X**

10:30 **MORNING BREAK & NETWORKING**

- 11:00** **Dual Automatic Incident Detection with Early Fire Detection: Advantages of Dual Automatic Incident Detection**
- Early Fire detection
 - Recent Projects
 - Current ITS-series Dual
 - Next generation dual camera
 - Q&A
- Steffen De Muynck, Flir Systems**
- 11:30** **Case Study: Exploring latest technologies developed and implemented in the Brenner base tunnel to reinforce fire safety and protection**
- Highlighting available technologies to measure gas release and prevent any explosion
 - Uncovering innovation in movement detection technology to efficiently locate passengers and workers
 - Discovering special guidelines developed for the Brenner Base tunnel to reinforce fire safety and protection, and take action from their implementation
- Michael Halwachs, Head of Tunnel Security, PORR group**
- 12:00** **Establishing how to get GPS signal in confined areas in order to improve security of workers and rescue forces penetrating those areas**
- François Goudenove, Chief Sales Officer, Syntony**
- 12:15** **Harnessing on new technology and data to better manage traffic and reducing fire risks in tunnels**
- Reviewing available technology to implement in your tunnel to better analyse and manage traffic
 - Harnessing on data collected in your tunnel to analyze traffic combination and incident patterns
 - Questioning whether vehicles screening at the entrance of a tunnel can help reducing incident by measuring the height, the weight and the temperature of the vehicles
 - Improving lightening and signage within the tunnels to easily and cost efficiently reduce car crash
- Rana Ilgaz, Head of Profession Highways and Traffic, TfL**
- 12:45** **Next generation of Situational Awareness during a tunnel incident**
- Situational Awareness from inside a tunnel fire direct to where you need it most
 - Critical information direct to the control room, fire command centre and mobile units
 - Comprehensive information in one place – integration of multiple data sources
 - Lights out – reliable technologies for emergency situations when visibility is zero in a tunnel
- Marc Begg, Highways Sales Director, Navtech Radar Ltd**
- 13:15** **LUNCH & NETWORKING**
- 14:15** **Bringing together all the tunnel stakeholders during the planning phase to reinforce safety and save time and money**
- Highlighting the importance of involving tunnel operators and infrastructures managers in the design phase
 - Working alongside local fire brigades to ensure the design of the tunnel facilitates emergency intervention
 - Reinforcing collaboration to cut cost on post-constructions works
 - Exploring real case study of such processes to implement it for every project in the future
- Jakob Böttger, Team leader Planning and deployment fire brigade, BLS**

- 14:45** **Exploring how to tackle ventilation challenges with new energy carriers in tunnels**
- Discovering how to ensure whether the source of smoke is mobile or stationary before ventilating
 - Harnessing on cellphone technology to locate passengers within and better orientate ventilation
 - Exploring how to use AI and Computational Fluid Dynamics (CFD) to better use ventilation
 - Considering the average walking speed of passengers before starting the ventilation and water mist
 - Connecting radar, cameras and sensors to better orientate the smoke in your tunnels

Benjamin Truchot, Head of Fire and Dispersion Department, Ineris

- 15:15** **Panel Discussion: Uncovering how to easily achieve higher security and safety in old tunnel**
- Investing in cost efficient technologies to improve easily security in old tunnel such as lights, signage and white painting to reflect light
 - Discussing how to overcome interoperability challenges with old tunnel: how to integrate new technology in your existing systems
 - Exploring several examples of successful tunnel upgrading to build on successful experience in Europe
 - Shedding lights on working closely with emergency services and fire brigades to be better prepared
 - Looking at various resistant materials to easily implement in refurbished tunnels to lower risk of fire

Rana Ilgaz, Head of Profession Highways and Traffic, TfL

Aurelio Rojo Garrido, President, APICI

15:45 **AFTERNOON REFRESHMENTS & NETWORKING**

- 16:15** **Workshop: Exploring the lessons learnt from the mining industry regarding fire safety and protection**
- In this insightful session, the speaker will present to the audience the technologies and strategies used in the mining industry to protect the workers from fire incident. From equipment to rescue room, from smoke detectors to survival kit, this session will cover all aspects of fire safety in mining, and will allow the audience to think outside the box to find cost effective solutions for their tunnels.

Richie Cahill, Safety Officer, Boliden

Samuel Backman, Development Engineer Health & Safety, Boliden

- 17:00** **Safeguarding the management of a cross-border partnership**
- Understanding how to maximise communication channels to ensure clear and coherent expectations
 - Outlining ways to work in partnership rather than isolation
 - Ensuring a seamless project delivery through supportive team environment
 - Upholding regulation standards to ensure full compliance across countries

Steve Demetriou, Member of the UK delegation, Channel Tunnel Safety Authority

18:00 **CHAIR'S SUMMARY AND CLOSE OF DAY ONE**

PROGRAMME DAY 2 - 19TH SEPTEMBER 2019

8:50 **REGISTRATION & REFRESHMENTS**

9:20 **CHAIR'S OPENING REMARKS**

9:30 **SPEAKER HOSTED ROUNDTABLES**

Interactive roundtable sessions offer a unique opportunity to come together with your peers to share best practice and develop solutions to critical challenges facing the industry as a whole. Hosted by industry experts and each focused on a single issue, roundtables are an exciting, interactive way to build your personal network and learn from the experience and expertise of others.

RT 1 **Exploring strategies to shape health and safety culture across different nations**

Stephen Fowler, Head of Health and Safety UK, Eurotunnel

RT 2 **Discussion on safety in road tunnels and underground transportation facilities due to vehicles with alternative fuels**

Maria Marton, Expert on Road Infrastructure and Tunnel Safety, Swedish Transport Agency

10:15 **MORNING BREAK & NETWORKING**

10:45 **Discovering the investigation results of fire in a road sweeper in the Fjærland tunnel on the Norwegian National Road 5**

- Exploring the causes of fire and the situation within the tunnel to understand gravity of such incident
- Unveiling the recommendations from the AIBN to ensure road-users safety during maintenance work
- Disputing pros and cons of automatic and manual controls during maintenance work: what is the best control strategy to achieve work and road-users safety
- Investigating the evacuation process put in place and discovering recommendations from the AIBN to improve communication with road-users

Marius Raddum, Inspector of Accidents, Accident Investigation Board Norway

11:15 **Tackling your system integration challenges: Getting it right in a one-off configuration**

- Statement: every tunnel is unique and procurement procedures do not stimulate knowledge
- The habits your organisation must learn to master systems integration
- Highlighting the challenges set by new conditions of work and the consequences on system integration
- Uncovering differences when integrating system in new tunnels and tunnels in refurbishment

Gert-Jan Ransijn, System Integration Manager, Amsterdam Metro

11:45 **The Montcenis Base Tunnel- The approach to safety during operation**

- Presentation of the future cross-border Montcenis base tunnel between Italy and France
- Presentation of the aspects of railway safety and accident management
- Presentation of the smoke extraction systems and fire protection network to be activated in the event of an accident.

Paolo Poti, Rail Safety Director, TELT

12:15 Reserved for M&I Materials Limited

12:30 LUNCH & NETWORKING

13:30 Safety in the Perthus cross-border tunnel, from design to operations and crisis management

- Brief presentation of LFP
- Brief presentation of the line and the Tunnel
- How safety has been integrated in the design criteria
- Operations and safety conditions
- Crisis Management during railway accidents and external attacks

Petros Papagiannakis, Chief Executive Officer, LFP

Marc Viñas Buxeda, Head of Tunnel Installation, LFP

14:00 Embracing cutting-edge IoT technology to protect your infrastructure and prevent fire

- Exploring the scope of available sensors measuring smoke, emissions or movements
- Harnessing on real-time communication and accurate data collected to ensure your tunnel is running smoothly and assess more accurately any dangerous situation
- Connecting your IoT technology to smart cars to improve communication with the drivers and tackle risks before they become danger
- Embracing technology connectivity within your tunnel to have a real-time control of your tunnel

Madeleine Martinsen, Maalarden University

14:30 Afternoon refreshments and networking

15:00 Embracing IT management of evacuation and smoke control in high demand underground metro lines

- Understanding the critical situation of fire incident in in high demand underground metro lines with 1.500 passengers per train with a frequency of 90 seconds
- Coordinating real time smoke control and evacuation operational strategies
- Exploring how to coordinate operational strategies with fire brigade intervention
- Highlighting how IT technologies are essential for the control of all the variables involved in the management of emergency situations in metros

Aurelio Rojo Garrido, President, APICI

15:30 Exploring the challenges of integrating new rail lines in built-up urban areas

- Enabling the current London Underground business model for train service delivery to be transformed to a more flexible, responsive and customer focused model
- Navigating ways on achieving a step change in railway reliability and delivering greater line capacity
- Identifying how to select the appropriate technologies and solutions which enable higher levels of automation
- Improve customer experience of deep tube services by introducing saloon air-conditioning on deep tube trains and continuous management of rising tunnel temperatures

Paul Thomas, Head of Engineering, New Tube for London, TfL

16:00 Chair's Summary and Close of Conference