



Day 1:		FIRE IN TUNNELS: 25-Hour ADVANCED COURSE	
Hora	Activity	Instructors	Remarks
9:00	INTRODUCTION	TST	15min:Explanation about San Pedro facilities. 15min: Introduction to fires in tunnels. 15min: Course programme.
9:45			
9:50	Intervention problems	TST	Introductory class describing the characteristics and general problems of fires in tunnels and what makes them different from other types of confined fires. <i>Main causes and risks</i>
10:35			
10:40	Fire evolution	TST	Explanation of the principles of the development of a fire in a tunnel, the temperature evolution and smoke dynamics.
11:25			
30 min	COFFEE-BREAK	TST	At the San Pedro facilities
11:55	PRACTICE IN TUNNEL ON SMOKE EVOLUTION	TST	The whole group will enter the tunnel with singlebottles, a test will follow on smoke evolution, without forced ventilation first and then with ventilation. Observation of stratification, backward movement and smoke drop, etc.
14:20			
1h 30 min	LUNCH		Nearest restaurant (10min)
16:00	Intervention methodology I	TST	Intervention guidelines adapted to the general problems of tunnels, establishing the sequences from the receipt of the notification to the solution of the incident.
16:45			
16:50	Intervention methodology II	TST	
17:35			



Day 2: FIRE IN TUNNELS:25-Hour ADVANCED COURSE			
Hora	Actividad	Monitores	Observaciones
9:00 9:45	Safety in tunnels: ventilation systems	TST	Objectives of ventilation systems, main systems and their impact on fires.
9:50 10:35	Orientation, search and rescue	TST	Adaptation of work procedures with SCBA indoors to the specific conditions of tunnels. Advancing, tracking, search and rescue of victims.
30 min	COFFEE-BREAK	TST	At the San Pedro facilities
11:05 14:00	DRILL 1: Orientation and search	TST	Long distance exercise to practice the basic guidelines for advancing, tracking, orientation and search for victims. Basic movements with twin-bottles, team coordination and consumption calculation.
1h 30 min	LUNCH		Nearest restaurant (10 min)
16:00 16:45	Safety in tunnels: extinguishing/evacuation	TST	Extinguishing systems and equipment in tunnels and evacuation characteristics.
16:50 17:35	Heat stress	TST	Heat stress is studied as a special risk in intervention in large fires in tunnels: pathologies, causes, symptoms and treatment.



Day 3: FIRE IN TUNNELS: 25-Hour ADVANCED COURSE			
Hora	Activity	Instructors	Remarks
9:00	Management and control of fires	TST	D and C principles applied to long, road and rail/underground tunnels.
9:45			
9:50	Management and control: a practical example	TST	Classroom practical exercise: data and photographs will be provided for the students to solve the problem.
11:25			
30 min	COFFEE-BREAK	TST	At the San Pedro facilities
11:55	DRILL 2: Penetration with long lay and tracking sectorisation	TST	Penetration of downstream teams from entrance with long lay and penetration from side access with entry into gallery and lay from outside. Objectives of both practices are search, rescue and extinguishing operations.
14:20			
1h 30 min	LUNCH		Nearest Restaurant (10 min)
16:00	Case Study	TST	Analysis of real incidents in tunnels (Mont Blanc, Taur, Frejus, Gotardo, Daegu, etc)
16:45			
16:50	Visit to Oviedo / Gijón (optional)		
17:35			



Day 4:		FIRE IN TUNNELS: 25-Hour ADVANCED COURSE	
Time	Activity	Instructors	Remarks
9:00	DRILL 3: SIMULTANEOUS PENETRATION	TST	Fire drill with several accesses, teams can access via mouth, gallery and side accesses. Coordination of teams from a PMA (optionally, penetration with Heavy Duty Urban Pump) multiple victims in vehicles, etc.
13:30			
13:35 14:20	Assessment and close	TST	
1h 30 min	LUNCH		Nearest restaurant (10min)

Should the customer require it, the following contents may be included: Penetration with Heavy Duty Urban Pump to be provided by the customer and adapting the thermal chamber, theory and practical exercises with long run teams (budget will be added aside) and use of large flow mobile ventilator (budget will be added aside). In all the cases, the courses can be tailor-made according to the customer's specific needs and possibilities.