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ANNEX I

ANNEX IV

GENERAL PROFESSIONAL KNOWLEDGE AND REQUIREMENTS REGARDING THE LICENCE

The objective of the "general training" is to provide "general" competence on all aspects that are relevant to the train driver's profession. The general training in this respect will focus on basic knowledge and principles that are applicable independently of the type and nature of rolling stock or infrastructure. It can be organised without practical exercises.

Competence with regard to specific types of rolling stock or with regard to safety and operating rules and techniques for a particular infrastructure is not part of "general" competence. Training to provide specific rolling stock or infrastructure competence relates to the train driver's certificate and is specified in Annexes V and VI.

The general training covers subjects (1) to (7) listed below. The order in which they are listed is not an order of priority.

The verbs used in the list indicate the nature of the competence expected to be achieved by the trainee. Their meaning is described in the following table:

Nature of competence	Description
to know, to describe	describes the acquisition of knowledge (data, facts) that is needed to understand relationships
to understand, to identify	describes the identification and memorisation of context, task performance and problem solving in a defined framework

- (1) A driver's work, the work environment, the driver's role and responsibility in the process of rail operation, the professional and personal demands of the driver's duties
 - to know the general thrust of legislation and rules applicable to rail operation (a) and safety (requirements and procedures regarding the certification of train drivers, dangerous goods, environmental protection, fire protection, etc.),
 - (b) to understand the specific requirements and professional and personal demands (working mainly on one's own, shift work over 24 hour cycle, individual protection and security, reading and updating documents, etc.),
 - to understand behaviours which are compatible with safety-critical (c) responsibilities (medication, alcohol, drugs and other psychoactive substances, illness, stress, fatigue, etc.),
 - (d) to identify the reference and operating documents (e.g. rule book, route book, driver's manual, etc.),
 - to identify the responsibilities and functions of persons involved, (e)
 - (f) to understand the importance of being precise in carrying out duties and in working methods,

- (g) to understand occupational health and safety (e.g. code of behaviour on and near tracks, code of behaviour for getting on and off the traction unit safely, ergonomics, staff safety rules, personal protective equipment, etc.),
- (h) to know behavioural skills and principles (stress management, extreme situations, etc.),
- (i) to know the principles of environmental protection (sustainable driving, etc.).
- (2) Railway technologies, including safety principles behind operational regulations
 - (a) to know the principles, regulations and provisions regarding safety in rail operation,
 - (b) to identify the responsibilities and functions of persons involved.
- (3) Basic principles of railway infrastructure
 - (a) to know systematic and structural principles and parameters,
 - (b) to know the general characteristics of tracks, stations, marshalling yards,
 - (c) to know railway structures (bridges, tunnels, points, etc.),
 - (d) to know operating modes (single track, double track operation, etc.),
 - (e) to know signalling and train control systems,
 - (f) to know safety installations (hot-axle box detectors, smoke detectors in tunnels, etc.),
 - (g) to know traction power supply (catenary, third rail, etc.).
- (4) Basic principles of operational communication
 - (a) to know the significance of communication and the means and procedures for communicating,
 - (b) to identify persons the driver needs to contact and their role and responsibility (staff of the infrastructure manager, working duties of other train staff, etc.),
 - (c) to identify situations/causes that require communication to be initiated,
 - (d) to understand communication methods.
- (5) Trains, their composition and the technical requirements for traction units, wagons, coaches and other rolling stock
 - (a) to know the generic types of traction (electric, diesel, steam, etc.),
 - (b) to describe the layout of a vehicle (bogies, bodies, driving cab, protection systems, etc.),
 - (c) to know the content and systems of labelling,
 - (d) to know the documentation on train composition,
 - (e) to understand braking systems and performance calculation,

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- (f) to identify train speed,
- to identify maximum load and forces at the coupler, (g)
- (h) to know the operation and purpose of the train management system.
- (6)Hazards involved in railway operations in general
 - to understand the principles governing traffic safety, (a)
 - to know the risks related to railway operation and the various means to be (b) used to mitigate them,
 - (c) to know safety-relevant incidents and understand the required behaviour/ reaction,
 - (d) to know the procedures applicable to accidents involving persons (e.g. evacuation).
- Basic principles of physics (7)
 - (a) to understand forces at the wheel,
 - to identify factors influencing accelerating and braking performance (b) (weather conditions, braking equipment, reduced adhesion, sanding, etc.),
 - to understand principles of electricity (circuits, measuring voltage, etc.). (c)