

## 8.1 Presentation

In order to illustrate theory chapters in an attractive manner, some concrete examples of vehicles built around the world are presented. Each example has the form of a four-page technical leaflet.

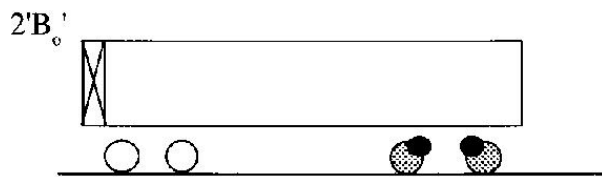
First page give a general presentation:

- Type of vehicle.
- Axle's arrangement.
- Railway company.
- Picture or drawing.
- Symbolic representation of equipment.
- Year of building.
- Main technical data.

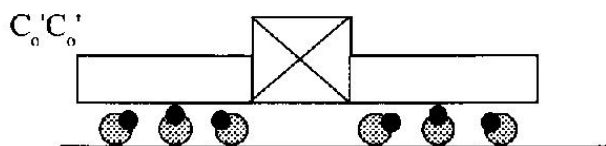
The second page gives a description of the vehicle, including the mention of similar series. References on theoretical part or articles are proposed for supplementary study.

Last two pages show effort diagrams versus speed, power-circuit diagram and vehicle diagram.

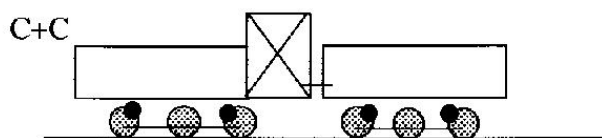
For axle arrangement, UIC conventions are used. As supplementary, index « i » is used for individual drive on wheels, without axis between them, in a similar way as index « o » is used for individual drive of axles in the same bogie or the same body.



Single-body vehicle on two two-axles bogies. Only one is motorised.  
Example : Power-car BT BDe 2/4



Single-body vehicle on two three-axles bogies.  
Example : Locomotive SBB Ee 6/6 II



Vehicle on two bodies, each one on three coupled axles.  
Example : Locomotive SBB Eem 6/6

**Fig. 8.2** Examples of vehicle designations.

Leaflets are classified from the type of power supply.

For the symbolic representation, some simple symbols allow a quick understanding of the equipment.

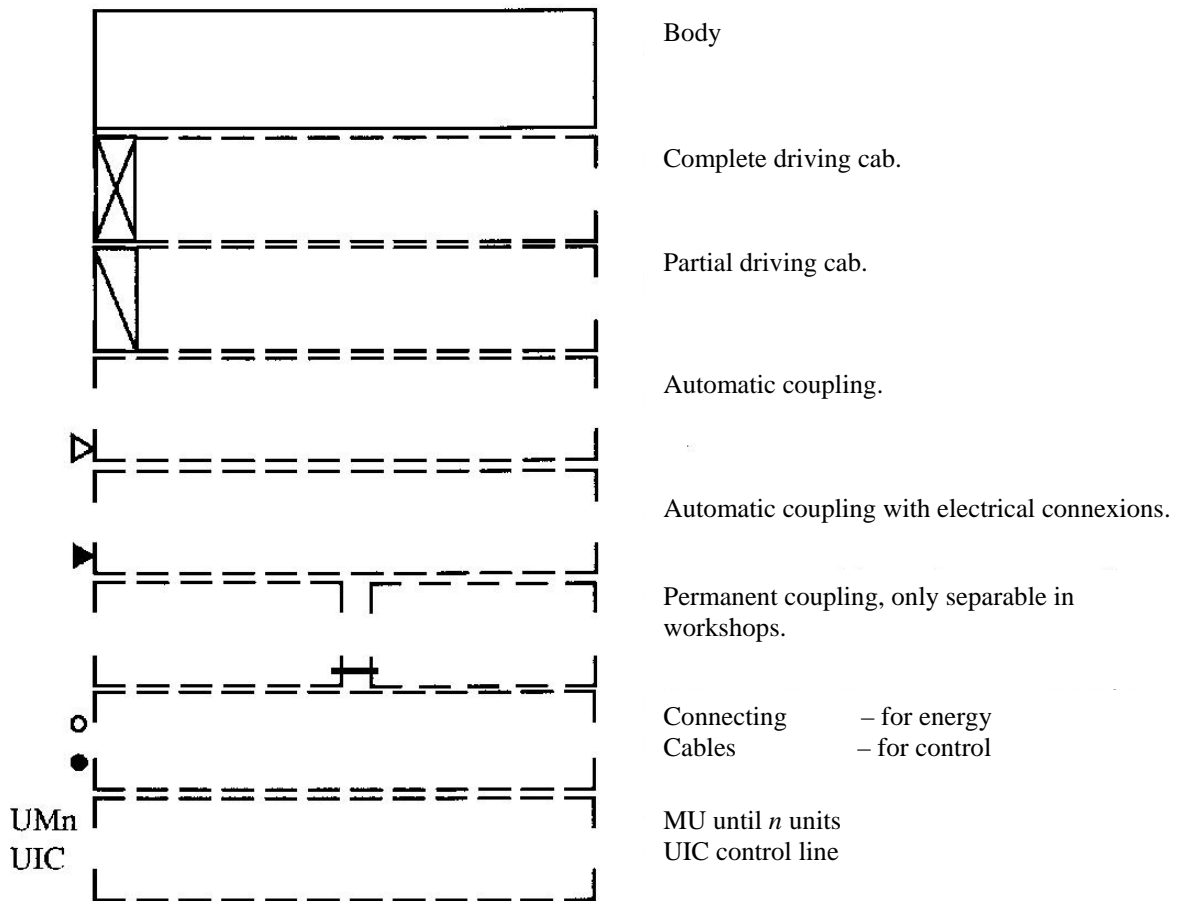


Fig. 8.3 Symbols : bodies and connexions.

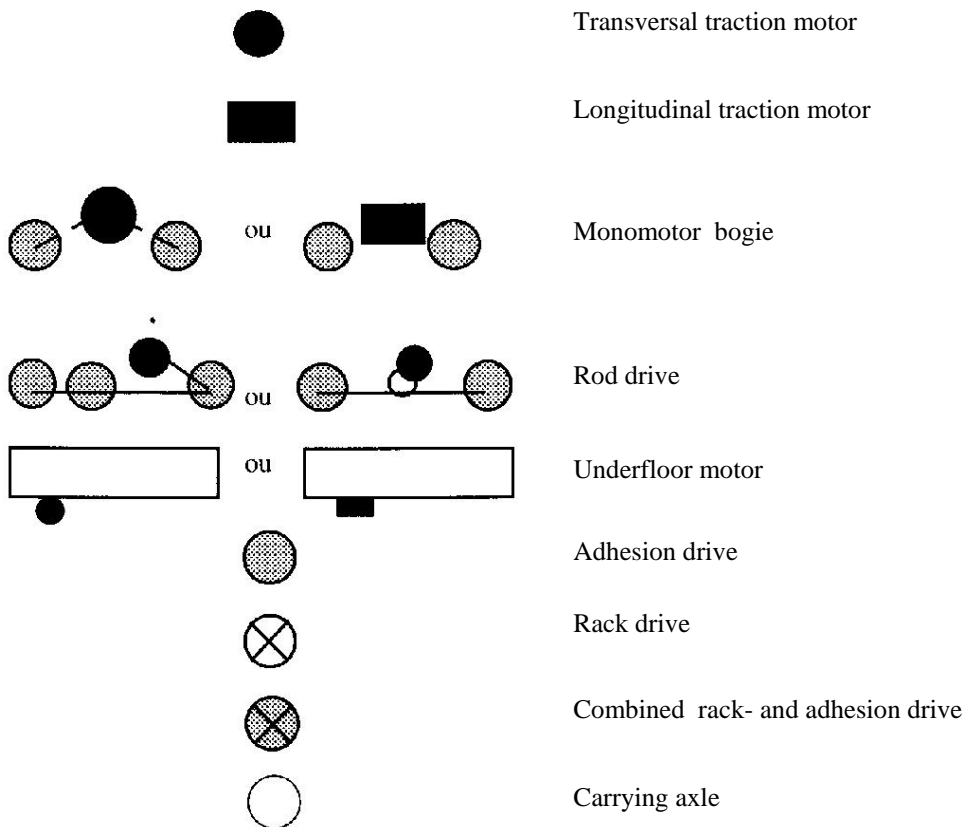


Fig. 8.4 Symbols : motors and axles.



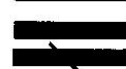









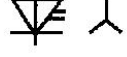


	Rhéostat de démarrage/freinage	
	Transformateur à réglage haute tension	
	Transformateur à réglage basse tension	
 epn em	Commande à contacteurs	– électropneumatiques – électromagnétiques
 Gr	Commande à graduateur	
Rh	Frein rhéostatique (pour une commande à rhéostat, ce symbole est omis)	
Réc	Frein à récupération	
 /	Frein électrique absent	
	Frein à patin électromagnétique sur rail	
	Redresseur fixe à vapeur de mercure (ignitron, excitron)	
	Redresseur commandé par grille (excitron)	
	Redresseur fixe à diodes	
	Redresseur à thyristors	
	Hacheur	
	Onduleur pour moteur polyphasé	
	Groupe convertisseur tournant	
DE =	Moteur diesel avec génératrice à courant continu	
DE 	Moteur diesel avec alternateur	
DH	Moteur diesel avec transmission hydraulique	

Fig. 8.5 Symbols : electric equipment.


pna	frein pneumatique à air comprimé	
pnv	frein pneumatique à vide	
hy	frein hydraulique	
epna	frein électropneumatique	
rub	frein à ruban	} inépuisables
ress	frein à ressort	
cli	frein à cliquet	
 T	frein électrique à courant de Foucault («Telma»)	

Fig. 8.6 Symbols : mechanical brakes.

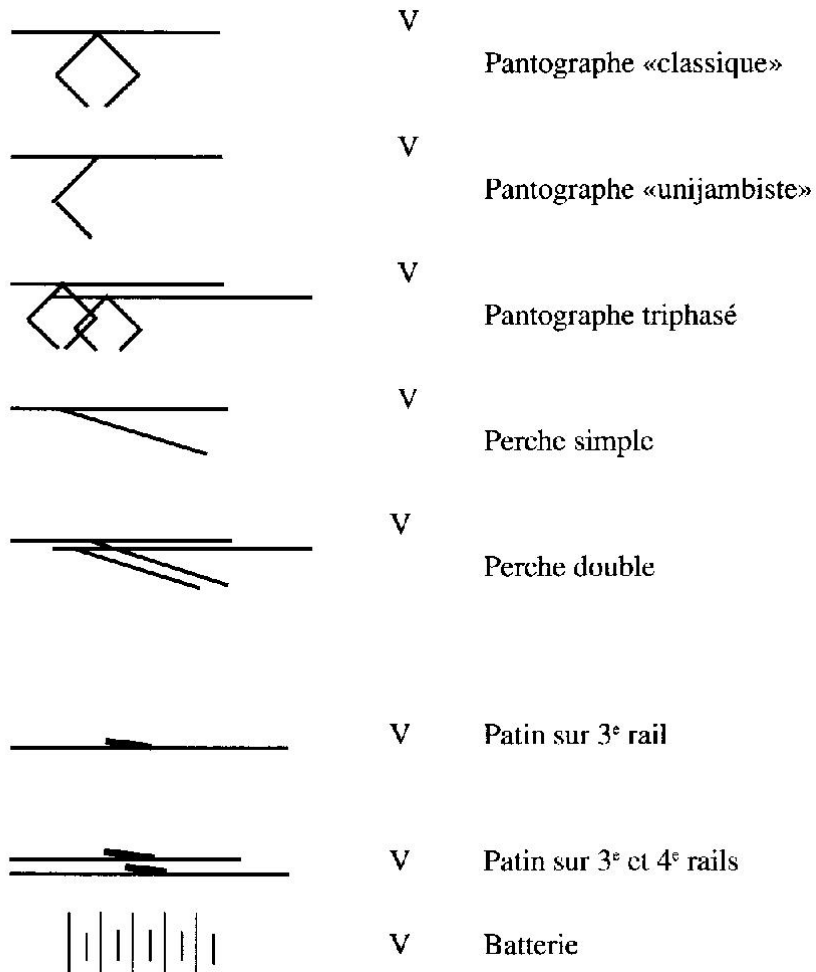


Fig. 8.7 Symbols : collection of current.

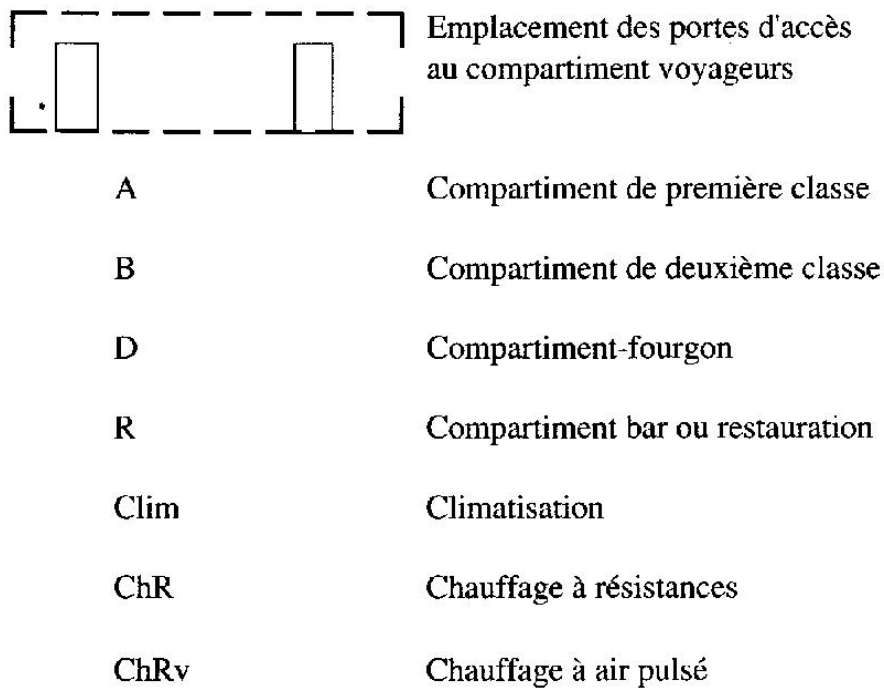


Fig. 8.8 Symbols railcars and EMUs.