

Leonardo

Student Manual

Shunting

Impressum

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PKP CARGO S.A.

Shunting

Student Manual



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1. Introduction.

At PKP CARGO S.A. shunting is to be conducted according to internal regulations, i.e. Instruction "R-1", „E-1" and "Ir-9 (R-34)" as well as technical regulations.

Shunting is every movement of rolling stock and activities related to these movements, which are being carried out on railway tracks, excluding train's entering, leaving and passing.

The shunting set is the rolling stock which is being shunted, situated in front of or behind a track vehicle carrying out shunting.

The term „shunting rolling stock" is the shunting set together with a track vehicle conducting shunting or an empty track vehicle carrying out shunting.

2. Staff responsible for shunting.

Shunting movements are to be conducted under surveillance of a shunting manager - an employee with proper qualifications.

A shunting manager can be:

- 1) shunter,
- 2) conductor,
- 3) station inspector,
- 4) signalman (switchman) in case of non-piloting operations of empty track vehicles,
- 5) other staff with qualifications required for a shunter or conductor.

Shunting crew is a group of people consisted of a shunter and at least one switchman.

3. Shunting.

While shunting a track vehicle is to be situated in front of or at the end of shunting set, and in case of a slope at the side of a slope.

While shunting signals are provided on stop signal, shunting and marshalling discs as well as manually and auditory.

Exceptionally, at the stations situated at the same level or a slope at the most of 2,5 ‰, a track vehicle may be situated between the rolling stock which is being shunted, but under the condition that wagon's pushing off will not be applied.

While shunting in order to communicate there are used signals, communication devices, orally and in writing.

If there are no obstacles to shunting running, then after having pointed turnout as well as derailleurs for each shunting route, a switchman gives a signal "Running permitted", which means that running is allowed.

Signal on a semaphore
"Running permitted"

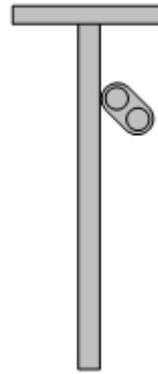


Light shunting disc

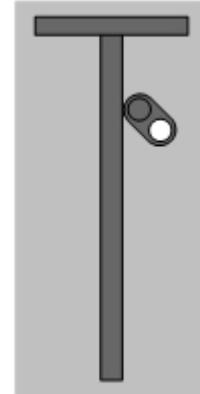
Shape shunting disc



Signal Ms 2
Shunting running
permitted



Signal M 2
Daytime
Shunting running permitted



Permission for shunting running is valid until:

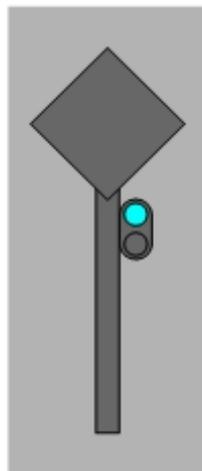
- 1) the next signalling device (for this shunting running),
- 2) in case of a lack of such a device – the next turnout, derailer or the nearest switch or crossroads in the neighbouring switching zone.

On passing signalling device by shunting rolling stock, the device must be adjusted in such a way that it indicates "No shunting running", which means no permission to shunting running.

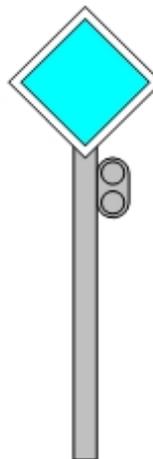


On a light shunting

Daytime



Nighttime



disc

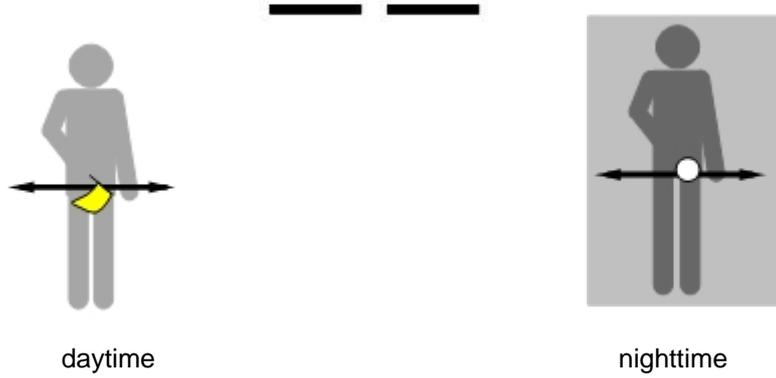
On a semaphore

Signal M1, Ms1- „No shunting running”

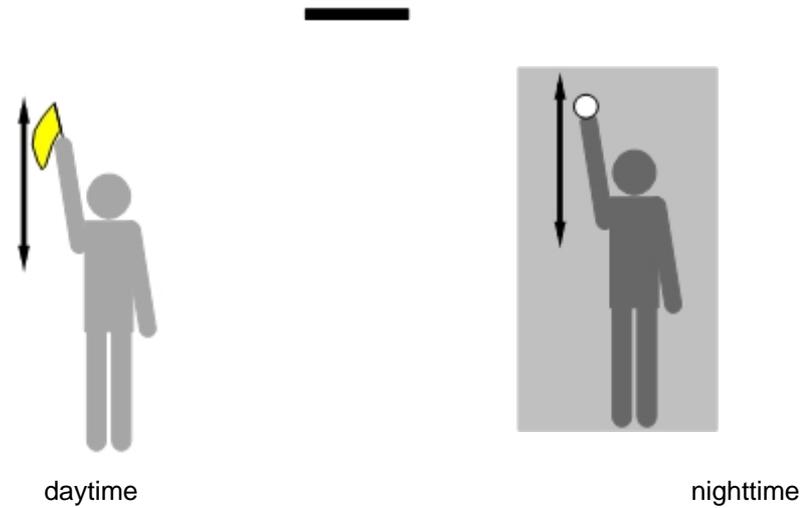
In case of a lack of a signalling device, permission is given by a switchman with the use of manual signal.

While shunting a shunting crew communicates with a train crew with the use of following manual and auditory signals, using signalling devices (a flag, a torch, a horn):

- 1) Signal Rm 1 "Towards myself"

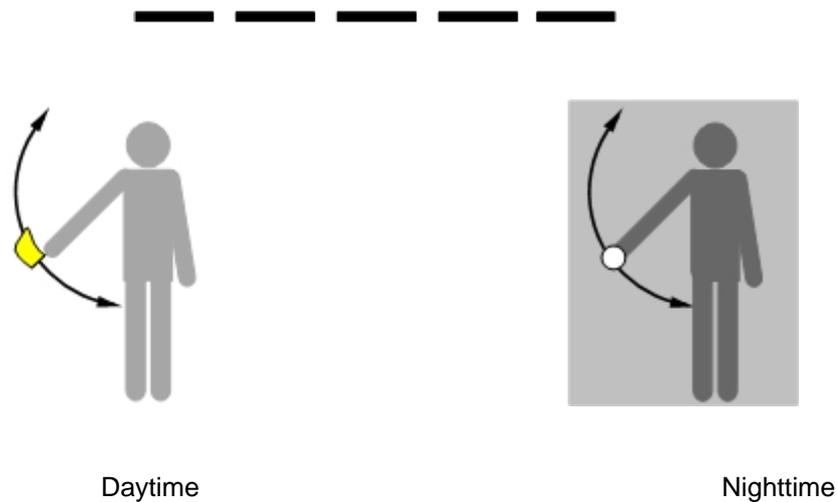


2) Signal Rm 2 "Off myself"



3) Signal Rm3 "Slow down"

On approaching standing rolling stock, the speed of shunting running should not exceed 3 km/h. An officer gives a signal towards a train driver Rm3 "Slow down":



4) Signal Rm6 "Force"

Next to a wagon, which is being approached is standing an officer carrying signalling devices. He is supposed to give a signal Rm6 "Force" towards a train driver.

• •



Daytime

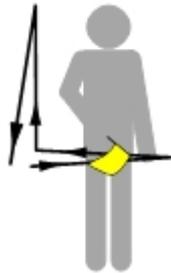


Nighttime

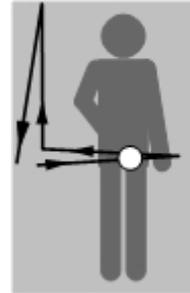
5) Signal Rm5 "Throw"

In order to throw wagons, an officer gives a signal Signal Rm5 "Throw" towards a train driver.

— — •



Daytime

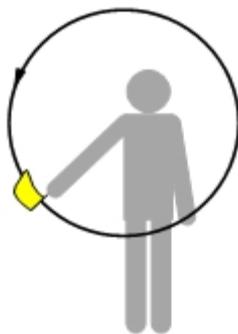


Nighttime

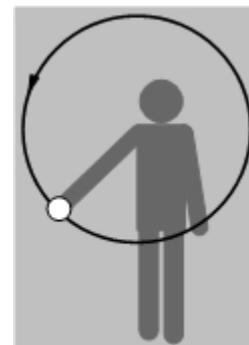
6) Signal Rm 4 "Stop"

While shunting a shunting manager is to stand in such a place that in emergency could give a signal "Stop".

• • • • • • • • • •



Daytime



Nighttime

When it is dark an officer should carry a torch facing the direction of running.

A train crew conducting shunting should:

- 1) watch signals attentively and apply them precisely;
- 2) watch attentively whether turnouts, derailleurs, traveling platforms, etc. are properly adjusted;
- 3) watch if on a running route there are not any obstacles (e.g. people on a track, damage of traction);
- 4) watch arrangement and movement of rolling stock .

Staff conducting shunting should be careful if there are people on board, or people are working nearby, dangerous load, in case of animals in wagons or wagons with a label "Be careful while shunting".

4. Shunting on main tracks.

This is a station inspector who gives a permission to conduct shunting on main tracks.

Shunting on a track, on which a train is to be running should be terminated, and a track must be cleared of rolling stock before train's approaching, leaving or passing.

A switchman in whose area shunting is being conducted is supposed to give shunting manager a signal to stop shunting as well as its surveillance.

Terminating of shunting should be conducted at the time according to technical regulations, which depends on local conditions. Shunting should be terminated on receiving a signal to prepare a track for a train or prior station inspector's order.

Shunting is terminated on removing and stopping shunting rolling stock from train's track, signals indicate no shunting and a shunting manager informed about terminating of shunting.

5. Shunting through level crossings.

Shunting through road level crossings as well as level crossings with toll-bars is allowed to be conducted after their closing or having checked that there are no obstacles. In case of level crossings without toll-bars, travelers are to be informed about this fact as well as about danger of crossing the tracks.

Before passing a level-crossing with or without toll-bars by shunting rolling stock, an officer is obliged to give signal "Stand at attention". Speed of a vehicle should not exceed 20 km/h, and an officer is to observe a level crossing attentively, and In case of pushing a vehicle, a shunter is to be on the first vehicle or in front of it and give proper signals.

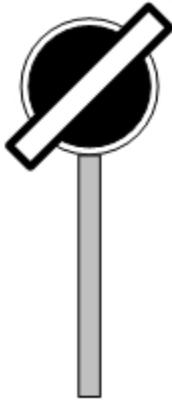
6. Marshalling on a marshalling hill.

Marshalling on a marshalling hill is conducted according to signals indicated on a marshalling disc.

According to given signals, a train driver is to comply the following speeds:

1) 3 km/h – for a signal "Push slowly"

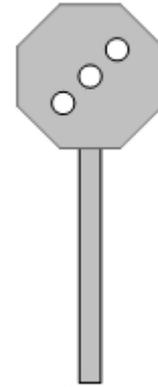
Shape marshalling discs



Daytime



Nighttime



Light

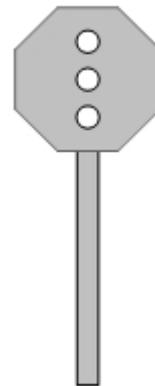
2) 5 km/h – for a signal "Push with moderate speed".



Daytime

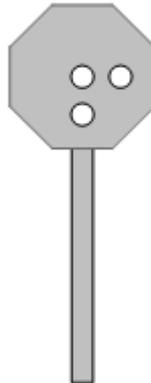


Nighttime

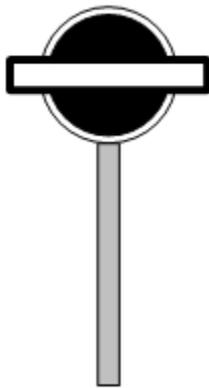


Light

3) Move back rolling stock – for a signal "Move back";



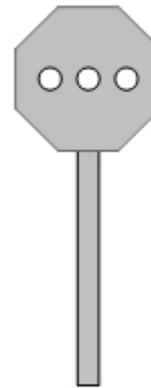
4) "Stop"



Daytime



Nighttime



Light

7. Wagon's halting.

While shunting, a track vehicle should be equipped with working pneumatic and hand brake, what is necessary to conduct shunting according to its tractive force as well as the length of a set, which is specified in technologic regulations.

If the length of shunting set exceeds allowed number of wagons, without active hand brakes, it should be halted with the use of a pneumatic brake and a shunting manager is supposed to carry out a simplified brake test.