

CHAPTER – VIII

THE ABSOLUTE BLOCK SYSTEM

A. Essentials

8.01. Essentials of the Absolute Block System -

(1) Where trains are worked on the Absolute Block System -

- (a) no train shall be allowed to leave a block station unless Line Clear has been received from the block station in advance, and
- (b) On double lines such Line Clear shall not be given unless the line is clear, not only up to the first Stop signal at the block station at which such Line Clear is given, but also for an adequate distance beyond it;
- (c) on single lines such Line Clear shall not be given unless the line is clear of trains running in the same direction, not only up to the first Stop signal at the block station at which such Line Clear is given, but also for an adequate distance beyond it, and is clear of trains running in the direction towards the block station to which such Line Clear is given.

(2) Unless otherwise directed by approved special instructions, the adequate distance referred to in clause (b) & (c) of sub-rule (1) shall not be less than –

- (a) 400 metres in case of two-aspect lower quadrant signalling or two-aspect colour light signalling, and
- (b) 180 metres in case of multiple-aspect signalling or modified lower quadrant signalling.

S.R.8.01/1. Essentials of the Lock & Block system - The following are the essentials of the Lock & block system -

- (a) It shall not be possible to take 'Off' last Stop signal until 'Line Clear' has been received from the block station in advance.
- (b) The last stop signal should immediately be replaced at 'On' automatically as soon as the train enters the block section.
- (c) It shall not be possible to grant line clear by the block station in advance unless the last preceding train has passed the block overlap complete and relevant reception signals have been replaced to "On".

Note: Lock and Block system is a system of signalling in absolute block system, wherein the passage of trains electrically controls the block instrument, which in turn electrically controls the signals.

B. Conditions for Granting Line Clear

8.02. Conditions for granting Line clear at a class 'A' station - At a class 'A' station on single line or double line, the line shall not be considered cleared and Line Clear shall not be given, unless -

- (a) the whole of the last preceding train has arrived complete;
- (b) all signals have been put back to 'On' behind the said train;
- (c) the line on which it is intended to receive the incoming train is clear up to the Starter; and
- (d) all points have been correctly set and all facing points have been locked for the admission of the train on the said line.

8.03. Conditions for granting Line clear at a class 'B' station -

(1) At a class 'B' station on double line, the line shall not be considered clear and Line Clear shall not be given, unless -

- (a) the whole of the last preceding train has arrived complete;
- (b) all necessary signals have been put back to 'On' behind the said train; and
- (c) the line is clear -

- (i) at stations equipped with two-aspect signalling -
up to the Home signal, or
 - (ii) at stations equipped with multiple-aspect signalling or modified lower quadrant signalling -
up to the outermost facing point or the Block Section Limit Board (if any).
- (2) At a class 'B' station on single line, the line shall not be considered clear and Line Clear shall not be given, unless -
- (a) the whole of the last preceding train has arrived complete;
 - (b) all necessary signals have been put back to 'On' behind the said train; and
 - (c) the line is clear -
 - (i) at stations equipped with two-aspect signalling -
up to the Shunting Limit Board or Advanced Starter (if any) at that end of the station nearest to the expected train.
or
up to the Home signal if there is no Shunting Limit Board or Advanced Starter,
or
up to the outermost facing point if there is no Shunting Limit Board or Advanced Starter or Home signal;
 - (ii) at stations equipped with multiple-aspect signalling or modified lower quadrant signalling -
up to the Shunting Limit Board or Advanced Starter (if any) at the end of the station nearest to the expected train,
or
up to the outermost facing point if there is no Shunting Limit Board or Advanced Starter.

Note: At a class 'B' single line station, this rule does not forbid direct reception of a train from one side, when Line Clear has been given to the block station on the other side provided the distance between the Outer signal and outermost facing points in two-aspect signalling, and between the Home signal and outermost facing point in multiple-aspect signalling, or modified lower quadrant signalling is not less than the sum total of the adequate distances prescribed in Rule 8.01 in regard to conditions for granting Line Clear and Rule 3.40 in regard to conditions for taking 'Off' Home signal for the admission of a train even where Shunting Limit Boards or Advanced Starter have not been provided as prescribed in sub-rule (1) of Rule 3.32. See illustrative diagrams at the end of this chapter.

S.R. 8.03/1. Working of trains at class 'B' stations (Semaphore Signalling Territory) during thick, foggy or tempestuous weather.

In case of thick, foggy or tempestuous weather when station signals can not be seen at a class 'B' station (Semaphore Signalling Territory), the Line Clear shall not be given unless -

- (i) All the signals are lit and fog signalman with detonators deputed and the Section Controller and Station Masters on either side advised about this.
- (ii) The Line on which it is intended to receive the train is clear up to its trailing points or up to the Starter, where provided, and
- (iii) All points have been correctly set and locked as per rule, for the admission of the train on the said line.
- (iv) However, 'Train out of Section' signal may be given in usual manner under the conditions prescribed for class 'B' station.

8.04. Conditions for granting Line clear at a class 'C' station - At a class 'C' station on single line or double line in two aspect, multiple aspect or modified lower quadrant signalling the line shall not be considered clear and Line Clear shall not be given, unless -

- (a) the whole of the last preceding train has passed complete at least 400 meters beyond the Home signal and is continuing its journey; and

- (b) all signals taken 'Off' for the preceding train have been put back to 'On' behind the said train;
provided that on a single line, the line is also clear of trains running in the opposite direction towards the block hut from the block stations at the other end.

C. Obstruction - Double Line

8.05. Obstruction on double line at a block station when a train is approaching -

- (1) Class 'A' station - When Line Clear has been given, no obstruction shall be permitted outside the Home signal, or, on the line on which it is intended to admit the train, up to the starter pertaining to the said line.
- (2) Class 'B' station - When Line Clear has been given, no obstruction shall be permitted outside the station section but shunting within the station section may go on continuously, provided the necessary signals are kept at 'On'.
- (3) When signals have been taken 'Off' for an approaching train on a line, which is not isolated, no shunting movement shall be carried on towards the points over which the incoming train will pass.

S.R. 8.05/1. Obstruction when train is approaching – Shunting under G.R. 8.05/2 is not permitted during thick, foggy, tempestuous weather and impaired visibility.

S.R. 8.05/2. The points referred in 3 of G.R. 8.05 also include the far end points.

8.06. Obstruction on double line in the block section -

- (1) When Line Clear has been given, no obstruction shall be permitted in the block section in rear,
- (2) Shunting or obstruction for any other purpose shall not be permitted in the block section in rear unless it is clear and is blocked back.
- (3) Shunting or obstruction for any other purpose shall not be permitted in the block section in advance unless it is clear and is blocked forward:
Provided that the when block section in advance is occupied by a train travelling away from the station, shunting or obstruction may be permitted behind the train under special instructions taking into consideration the speed, weight and brake power of trains and the gradients on the section, and as soon as intimation has been received that the train has arrived at the block station in advance, the line shall be blocked forward if it is still obstructed.

Note: See Rule 8.14 also.

S.R. 8.06/1.

- (a) Whenever shunting is permitted in block section, either in rear or front, the Station Master, after blocking back/forward the line, as the case may be, shall issue an authority on prescribed form (T/806) authorising the Loco Pilot to enter the section for shunting purposes. After the shunting has been completed in the block section the Loco Pilot shall return this authority to the Station Master, who shall paste it along with the original foil.
- (b) The authority for performing shunting (T/806) shall also be given, when such shunting is permitted in the block section occupied by a train travelling away from the station. This authority need not be issued, when a shunt signal provided below the last Stop signal, has been taken 'Off' for shunting purposes.

D. Obstruction - Single Line

D.1. Class 'A' stations

8.07. Obstruction on single line at a class 'A' station when a train is approaching - When Line Clear has been given, no obstruction shall be permitted outside the Home signal, or, on the line on which it is intended to admit the train, up to the Starter which controls the train.

8.08. Obstructing the block section at a Class 'A' station on single line - The block section shall not be obstructed for shunting purposes, unless -

- (a) **The Station Master has received Line Clear from the Station Master at the other end of the block section, or**
- (b) **The block section is blocked back, or**
- (c) **is occupied by a train travelling away from the block station at which the shunting is to be performed which shunting may be permitted under special instructions taking into consideration the speed, weight and brake power of trains and the gradients on the section. As soon as intimation has been received that the train has arrived, the block section shall be blocked back, and**
- (d) **The Loco Pilot or other person in charge of the shunting operations has received distinct orders from the Station Master to shunt in a manner directed by special instructions.**

D.2. Class 'B' Stations

8.09. Obstruction in the face of an approaching train at a class 'B' station on single line –The line outside the Home signal in two-aspect signalling territory or outermost facing point in multiple aspect or modified lower quadrant signalling territory in the direction of a train for which line Clear has been given, shall only be obstructed when a Shunting Limit Board or an Advanced Starter is provided and under special instructions which take into consideration the speed, weight and brake power of trains, the gradients, the position of the first Stop Signal and the distance from which that signal can be seen by the Loco Pilot of an approaching train.

S.R.8.09/1. Where in terms of GR 8.09 shunting is permitted out side the home signal in two aspects signalling territory or outside outermost facing points in multiple aspect or modified lower quadrant signalling territory up to shunting limit board or Advance starter in the face of an approaching train, the Station Working Rules shall include a specific mention to this effect. While permitting such shunting, the work, load, speed, weight and brake power of trains, the gradients, the position of the first stop signal and the distance from which that signal can be seen by the Loco Pilot of an approaching train, shall be taken into consideration.

S.R.8.09/2. Where shunting is permitted under G. R. 8.09 it should be specifically recorded on Form. No. T/806.

S.R.8.09/3. Shunting under G.R. 8.09 is not permitted during thick foggy, tempestuous weather and impaired visibility.

8.10. Obstructions within station section at a class B station on single line -

- (1) **If the necessary signals are kept at on shunting may be carried on within the station section, provided the provisions of Rule 8.09 are complied with for shunting up to Shunting Limit Board or Advanced Starter, where provided.**
- (2) **When signals have been taken off for an incoming train on to a line, which is not isolated, no shunting movement shall be carried on towards the points over which the incoming train will pass.**

S.R.8.10/1. The points referred to in para (2) of G.R. 8.10 also include the far-end points.

S.R.8.10/2. Shunting under 8.10(1) is not permitted during thick foggy, tempestuous weather and impaired visibility.

8.11. Obstructions outside station section at a class B single line station equipped with two-aspect signals - The line outside the station section and up to the Outer signal shall not be obstructed unless a railway servant specially appointed in this behalf by the Station Master is in charge of the operations, and unless -

- (a) **The block section into which the shunting is to take place is clear of an approaching train and all relevant and necessary signals are at on position, or**
- (b) **If an approaching train has arrived at the Outer signal, the Station Master has personally satisfied himself that the train has been brought to a dead stand at the signal:
Provided that the line shall not be obstructed under clause (b) in thick, foggy or tempestuous weather impairing visibility, or, in any case unless authorised by special instructions.**

S.R.8.11/1. At a class B station on single line equipped with two-aspect signals, shunting may be performed between the Outer signals without blocking back the section, provided 'Line Clear' has not been granted for a train to approach. In the event of receipt of 'Is line clear' signals from the other end of the section, and if the section is still occupied, the line should be immediately 'blocked back'.

At stations where token less block instruments are installed, such shunting out side the station section up to the outer signal shall be performed only after section has been 'blocked back' and the shunt/occupation key handed over to the Loco Pilot.

8.12. Obstruction outside station section at a class 'B' single line station equipped with manually operated multiple-aspect signals - The line outside the station section and up to the first Stop signal shall not be obstructed unless a railway servant specially appointed in this behalf by the Station Master is in charge of the operations, and unless the block section into which the shunting is to take place is clear of an approaching train.

S.R.8.12/1. At a class B station on single line equipped with manually operated multiple-aspect signals, shunting may be performed between the Home signals without 'blocking back' the section, provided 'Line Clear' has not been granted for a train to approach. In the event of receipt of 'Is Line Clear' signal from the other end of the section and if the section is still occupied, line should be immediately 'blocked back'.

At stations where token less block instruments are installed, such shunting outside the station section up to the Home signal shall be performed only after the section has been 'blocked back' and the shunt/occupation key handed over to the Loco Pilot.

8.13. Obstruction outside the first Stop signal at a class 'B' station on single line - The line outside the first Stop signal shall not be obstructed unless the line has been blocked back.

E. General provisions.

8.14. Block back or Block forward - Block back or block forward shall be done only in accordance with the procedure prescribed by special instructions.

S.R.8.14/1. The detailed procedure for block back and block forward is given in Block Working Manual.

8.15. Authority for shunting or obstruction in block section - While permitting shunting or obstruction in the block section, the Loco Pilot shall be given authority for shunting in the block section as prescribed under special instructions which authority may be -

- (a) **either a shunting arm of prescribed size and design on the same post as and under the Last Stop signal, or**
- (b) **a token of prescribed design, or**

(c) a written permission to shunt.

S.R.8.15/1. Whenever shunting is permitted in the block section, the Loco Pilot shall be given an authority as detailed below in addition to Blocking Back and Blocking forward which shall be: -

(i) Both on double and single line – By taking off shunt signal provided as per clause (a) of G.R.8.15 when the Loco Pilot has to pass last stop signal both on double line and single line and specific written authority on shunting order (Form T/806).

(ii) On single line – By handing over the concerned token or tablet where Neal’s Ball token or tablet instruments are provided for shunting occupation key in token less block territory to the Loco Pilot as an authority to shunt in the Block section and a specific written authority on shunting order (FormT/806).

(iii) On double line – By handing over occupation key where Daido’s block instruments are in use by issuing specific written authority to shunt on Form.(T/806) to the Loco Pilot. In case of other instrument, specific instructions on (T/806) should be issued.

(iv) When shunting is permitted Form T/806 must be issued to the Guard and the Loco Pilot of the train specifically mentioning the following points on this form and acknowledgement of both obtained.

- (a) Limits of shunting.
- (b) Details of work to be done.
- (c) Running line and other line involved in the movement.
- (d) Approximate time up to which shunting is to be completed.

(v) When shunting of a train is permitted suitable entries in this regard should be made in the train signal register and Log Book of ASM and Cabinmaster and Log Book of the cabin men.

S.R.8.15/2. The Station Master will recover the token/tablets/shunting occupation keys and /or written authority before giving line clear for a train to approach from the direction referred to thereon.

S. R.8.15/3. When in terms of G. R. 8.15 shunting is permitted in Block Section the Station Working Rules shall contain suitable instructions governing such movement.

8.16. Illustrative diagrams - Class ‘A’, ‘B’ and ‘C’ stations on single line and double line are illustrated in the following diagrams, which are not drawn to scale.











