

APPENDIX-XI

INTERLOCKING

I. INTERLOCKING:

1.1. Interlocking can be defined as an arrangement between points, signals and other appliances interconnected electrically or mechanically or both to ensure the following objectives:-

- a) It shall not be possible to take 'off' signals for a route unless all the points are correctly set and the facing points are locked for that route,
- b) Once the signals are cleared, it shall not be possible to alter the points on the route unless the signals are put back to 'on',
- c) Even though the signals are put back to 'on', it shall not be possible to alter the points unless the intended movement over such points is completed,
- d) It shall not be possible to operate signals leading to conflicting movements,
- e) The points and signals can be operated only in a sequence to ensure safety, and
- f) Where signals are connected to any devices, the signal shall not obey until the conditions for working such devices are fulfilled.

The above objectives can be summarized as four essentials of interlocking:-

- i) Setting of route,
- ii) Locking,
- iii) Holding, and
- iv) Prevention of conflicting movements.

1.2. Standards of Interlocking

Depending upon the standards of safety devices provided at the stations, in conformity to the speed factor, there are four standards of interlocking, namely Std I (R), Std II (R), Std III (R) and Std IV (R). The signal equipment, the manner of locking facing points and operation of points and signals differ in the different standards of interlocking.

1.3. Following are the essentials of the minimum signalling features of the four standards of interlocking:-

S. No.	Item	Std. I (R)	Std. II (R)	Std. III (R)	Std. IV (R)
	Allowable speed (KMPH)	Upto 50	Upto 110	Upto 140	Upto 160
1.	Isolation	Not compulsory	Compulsory	Compulsory	Compulsory
2.	Two Aspect (TAS) semaphore/Multi Aspect Signalling	TAS/MAS	TAS/MAS	MAS	MAS
3.	Double Distant	Not compulsory	Desirable	Compulsory	Compulsory

S. No.	Item	Std. I (R)	Std. II (R)	Std. III (R)	Std. IV (R)
	Allowable speed (KMPH)	Upto 50	Upto 110	Upto 140	Upto 160
4.	Point operation	Mechanical	Mechanical/ Electrical	Mechanical/ Electrical	Electrical
5.	Point locking	Key/Facing Point/hand plunger	Facing Point locking with point machine	Facing Point locking with point machine	Clamp type direct locking is desirable
6.	Point detection	Mechanical/ Electrical	Mechanical/ Electrical	Mechanical/ Electrical	Electrical
7.	Lock detection	Not compulsory	Compulsory	Compulsory	Compulsory
8.	Interlocking	Key/ Mechanical	Mechanical/ Electrical/ Electronic	Mechanical/ Electrical/ Electronic	Electrical/ Electronic
9.	Track circuiting	Not compulsory	Mechanical – main line Electrical / Electronic – all running lines	All running lines	All running lines
10.	Block working	Token	Token/SGE	SGE/ Track circuit	SGE/ Track Circuit
11.	Preventing signal passing at danger	Not Compulsory	Not Compulsory	Not compulsory	Desirable

1.4. The following instructions shall be taken into consideration while providing the above standards of interlocking:-

- 1 Isolation is not compulsory provided that the conditions laid down in GR 4.11 are complied with.
 - a No train shall run through an interlocked station at a speed exceeding 50 kilometres an hour, or such less speed as may be prescribed by approved special instructions unless the line on which the train is to run has been isolated from all other lines by the setting of points or other approved means, and interlocking is such as to maintain the condition during the passage of the train.
 - b In every case in which trains are permitted to run through on a non-isolated line, all shunting shall be stopped and no vehicle unattached to an engine or not properly secured in accordance with Rule 5.23 may be kept standing on a connected line which is not isolated from the through line.
- 2 Double Distant is required on sections where goods trains have a braking distance of more than 1 KM.
- 3 At stations provided with central panel interlocking [Std III (R) or Std IV (R)] on high density routes, suitable means for verifying complete arrival of train are required.

Note: The provisions of revised standards of interlocking will only apply to future signalling and interlocking installations. Wherever existing installations do not fulfill these requirements, existing speed of operation may be permitted to continue.