NUTS AND BULLETS ON SWR

S SHAKEEL AHMAD

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GR 2005: CONTAINED CORRECTION SLIPS FROM 50- 81

GR 2011: CONTAINED CORRECTION SLIPS FROM 82- 137

CURRENT GR 2022 AFTER THIS TILL DATE 26.05.2024 CORRECTION SLIPS ADDED FROM 1-9

#APPROVED SPECIAL INSTRUCTIONS = CRS

#SPECIAL INSTRUCTIONS = PCOM

#AUTHORISED OFFICER ISSUES SPECIAL INSTRUCTIONS.

#SPECIAL INSTRUCTIONS MAY BE:

1. CORRECTION SLIP

2. SUBSIADIARY RULES

3. SPECIAL INSTRUCTIONS

#AUTHORISED OFFICER IS PCOM BY DEFAULT

GR—RAILWAY BOARD

SR---PCOM

SWR---Sr DOM + Sr DSTE

CRS –DEFINES MPS

ON MPS MRT IS CALCULATED

BOOKED SPEED IS DEFINED BY PCOM

ON BOOKED SPEED NRT IS CALCULATED.

LHB RAJDHANI COACH IF WORKING ON S/PIPE OR SPRING DEFLATED THEN CLEAR BLOCK SECTION OR UPTO NEXT CREW CHANGING POINTWITH 100 KMPH

FLAT TYRE:

ENGINE 50 MM

COACH 50 MM

WAGON 60 MM

WHEEL BURN RAIL:

50 MM WIDE OR 06 MM DEEP

SUBSIADIARY SIGNAL

|  |  |
| --- | --- |
| SUPPLIMENTARY SIGNAL | SHUNT SIGNAL |
| 1. CALLING ON:  1. SHORT SQUARE ENDED  2. MINIATURE COLOUR LIGHT  2. CO- ACTING – ONE TYPE (DUPLICATE SIGNAL)  3. REPEATING:  1. BANNER TYPE  2. SEMAPHORE ARM  3. COLOUR LIGHT | THREE TYPES:  1. DICS TYPE  2. MINIATURE SEMAPHORE ARM TYPE  3. POSITION LIGHT TYPE |

SIGNALS MAY NOT BE PROVIDED IN ONE TRAIN ONLY SYSTEM OR WHICH ARE EXEMPTED FROM PROVISIONS BY APPR OVED SPECIAL INSTRUCTIONS

3.25. Obligation to provide fixed signals at stations - Fixed signals prescribed in this sub-chapter shall be provided at every station, except - (a) at stations between which trains are worked on the One Train Only System, and (b) at stations which are exempted from the provisions of signals under approved special instructions.

LOWER QUARDRANT DISTANT SIGNALS ARE PROVIDED IN MLQ

UPPER QUARDRANT DISTANT SIGNALS ARE PROVIDED IN MAUQ

3.14 Shunt signals –

(1) (a) A Shunt signal is a subsidiary signal and shall be either - (i) a white disc with a red bar across it, or (ii) a position light signal. (b) Under special instructions, a Shunt signal may be a miniature semaphore arm.

(2) Shunt signals control shunting movements.

(3) A Shunt signal may be placed on a post by itself or below a Stop signal other than the first Stop signal of a station.

(4) More than one Shunt signal may be placed on the same post and when so placed the topmost Shunt signal shall apply to the extreme left-hand line and the second Shunt signal from the top shall apply to the next line from the left and so on.

(5) When a Shunt signal is taken “OFF”, it authorizes the Loco pilot to draw ahead with caution for shunting purpose although Stop signal if any, above it is at on.

(6) When a Shunt signal is placed below a Stop signal, it shall show no light in the ‘ON’ position.

(7) In case Shunt signals are not provided, hand signals may be used for shunting.

3.16. Repeating signals - (1) A signal, placed in rear of a fixed signal for the purpose of repeating to the Loco pilot of an approaching train the aspect of the fixed signal in advance is called a Repeating signal. (2) A Repeating signal shall be provided with an “R” marker and shall be of - a) banner type, or b) a square ended semaphore arm, or c) a color light signal,

SR 3.16.01 - (i) When a Stop signal cannot be seen from the sighting distance on account of curves, over bridges or other local conditions, a Repeating signal shall be provided. ii) In regard to Two-Aspect Signals including Modified Lower Quadrant signals, the minimum visibility distance for various signals shall be follows ... a) Home signals 400 meters b) Main Starter signals 400 meters c) Loop Starter s

ignals 200 meters d) Outer/Warner signals

3.15. Co-acting signals –

(1) Co-acting signals are duplicate signals fixed below ordinary signals and are provided where, in consequence of the height of the signal post, or of there being an over-bridge or other obstacle, the main arm or light is not in view of the Loco pilot during the whole time that he is approaching it.

(2) Co-acting signals shall be fitted at such height that either the main arm or light, or the Co-acting arm or light, is always visible.

3.26. Commissioning of fixed signals

Fixed signals shall not be brought into use until they have been passed by the Commissioner of Railway Safety as being sufficient to secure the safe working of trains.

SR.3.26.01. No new signal shall be taken into use

Until it has been inspected by a Sighting Committee consisting of Divisional Transportation Inspector, Loco Inspector and Signal Inspector, on electrified sections, the Driving Inspector shall also be a member of Sighting Committee.

3.27. Minimum equipment of fixed signals at stations provided with manually operated multiple- aspect signaling - The minimum equipment of fixed signals to be provided for each direction shall be as follows – (a) at class ‘B’ stations ... a Distant, a Home and a Starter, and ( b) at class ‘C’ stations... a Distant, and a Home,

28. Minimum equipment of fixed signals at stations provided with modified lower quadrant signaling

Modified lower quadrant signaling may be introduced only where it is expressly sanctioned by a special order of the Railway Board.

SR 3.39.03.- Non-interlocked facing points, manning and exhibition of hand signal a) All non-interlocked facing points set for reception and dispatch of trains shall be locked. In addition, the outermost facing points shall be manned and the person manning the facing points shall exhibit ‘proceed’ hand signal to the approaching train till it completely passes the facing points.

3.37. Normal aspect of signals –

(1) Unless otherwise authorized under approved special instructions, fixed signals, except automatic signals, shall always show their most restrictive aspect in their normal position. (2) The normal aspect of an Automatic Stop signal is ‘Proceed’. Where, however, the signal ahead is manually operated, the aspect normally displayed may be ‘Caution’ or ‘Attention’.

SR 3.39.03.- Non-interlocked facing points

Manning and exhibition of hand signal a) All non-interlocked facing points set for reception and dispatch of trains shall be locked. In addition, the outermost facing points shall be manned and the person manning the facing points shall exhibit ‘proceed’ hand signal to the approaching train till it completely passes the facing points.

SR 3.42.02.- Sequence of taking off through signals at stations for run-through end trains

Provided with Advanced Starter- (a)

(i) Where lower -quadrant signals are provided If the main line of station section and section ahead are clear, main Home, Outer, Advanced Starter, main Starter and warner signals may be taken ‘off ‘in the order given.

(ii) Where multiple-upper quadrant signals are provided The Main Home, main Starter, Distant (raised to 90 Degree from the horizontal) and Advanced Starter may be taken ‘off’.

(iii) Where modified lower quadrant signals are provided- Main Home, Distant, Advanced starter, Starter and Warner may be taken ‘off ‘.

(iv) Where Color light signals are provided Main Home, Advanced Starter and Main Starter may be taken ‘ OFF’

3.46. Use of fixed signals for shunting.

(1) The Outer Home and the last Stop signal of a station shall not be taken ‘OFF ‘for shunting purposes. (2) At stations where Advanced Starters are provided Starters may be taken ‘OFF ‘for shunting purposes , except where the interlocking interferes with this practice, in which case hand signals shall be used where Shunting signals are not provided.

SR 3.51.03

Once the leading wheels of an engine or vehicle or any part of a train have entered the points the person responsible for operation of points and signals must not operate the points until the engine and all the vehicles have passed completely clear of such points. If however, he notices any unusual condition which is likely to endanger safety, he shall exhibit Stop hand signal and try to draw the attention of the Driver by shouting and gesticulating.

SR 3.51.06

b) If all the line at a station happens to be blocked, when line clear has been granted to a train, the points should be set for the line occupied by a stabled load or a goods train in that order so that, in case of mishap, the chances of casualties are minimized. In case all the lines are occupied by passenger train, points should be set for a loop line, to negotiate which the speed of the incoming train would be reduced which in turn, would minimize the consequences/casualties. While doing so, points may be set for a loop occupied by a train, if any, whose engine is facing the direction of approach of the incoming train rather than for a loop occupied by a train where a passenger coach, will in the case of collision, receive the impact.

BAD RIDING

LP WIIL HAVE TO JUDGE THE SERIOUSNESS OF BAD RIDING. FOR ANY SERIOUS CONDITION TAKE ALL NECESSARY STEPS LIKE STOP THE TRAIN, SWITCH ON F/L, PROTECT AS PER GR 6.03.

BUT THIS IS NOT THAT CASE.

IF BAD RIDING IS REPEATING AT AREGULAR INTERVAL, THEN IS DUE TO LOCO WHEELS.

IF JERK IS NOT REPEATING AND NOT CAUSING ANY SERIOUS ACCIDENT THEN IT COMES UNDER SR 2.11.01 + USR 6.07

DUTIES OF LOCO PILOT IN CASE OF BAD RIDING ATTRIBUTED DUE TO TRACK DEFECT

NOTE DOWN THE Km No, TIME AND SECTION

CASE 1: ABSOLUTE SECTION SR 2.11.01

APPROACH THE NEXT BLOCK STATION CAUTIOUSLY, WHISTLING FREQUENTLY.

STOP THE TRAIN WITHOUT CLEARING BLOCK SECTION IN SUCH A WAY THAT ENGINE IS IN FRONT OF STATION BUILDINGOR CABIN.

HANDOVER WRITTEN MEMO TO STATION MASTER.

DO NOT HANDOVER TANGIABLE AUTHORITY TO PROCEED TO S.M. BEFORE HANDING OVER THE MEMO AND GET RECEIVE COPY.

CASE 2: IB SECTION UNDER USR 6.07

(A) BETWEEN REAR ADVANCE STARTER TO IB:

1. NO NEED TO STOP THE TRAIN ON SPOT.

2. STOP AT IB SIGNAL EVEN IT IS GREEN.

3. INFORM REAR STATION MASTER FROM IB PHONE ABOUT THIS BAD RIDING MENTIONING Km. WHILE APPROACHING STATION BE VIGILANT AND CAUTIOUS THAT THERE MAY BE MORE TRACK DEFECTS AHEAD.

4. AGAIN STOP THE TRAIN WITHOUT CLEARING BLOCK SECTION IN SUCH A WAY THAT ENGINE IS IN FRONT OF STATION BUILDING OR CABIN.

HANDOVER WRITTEN MEMO TO STATION MASTER.

DO NOT HANDOVER TANGIABLE AUTHORITY TO PROCEED TO S.M. BEFORE HANDING OVER THE MEMO AND GET RECEIVE COPY.

(B) BETWEEN IB AND HOME SIGNAL AHEAD

1. STOP THE TRAIN ON SPOT.

2. INFORM STATION MASTER REAR AND STATION MASTER AHEAD AND LOCO PILOTS ALREADY LEFT IN SECTION ABOUT THIS BAD RIDING THROUGH AVAILABLE MEANS OF COMMUNICATION.

3. START ONLY AFTER CONFIRMING THAT THEY HAVE LISTENED.

4. WHILE APPROACHING STATION BE VIGILANT AND CAUTIOUS THAT THERE MAY BE MORE TRACK DEFECTS AHEAD.

5. AGAIN STOP THE TRAIN WITHOUT CLEARING BLOCK SECTION IN SUCH A WAY THAT ENGINE IS IN FRONT OF STATION BUILDING OR CABIN.

HANDOVER WRITTEN MEMO TO STATION MASTER.

CASE 3: AUTO SECTION USR 6.07

1. STOP THE TRAIN ON SPOT.

2. INFORM STATION MASTER REAR AND STATION MASTER AHEAD AND LOCO PILOTS ALREADY LEFT IN SECTION ABOUT THIS BAD RIDING THROUGH AVAILABLE MEANS OF COMMUNICATION.

3. START ONLY AFTER CONFIRMING THAT THEY HAVE LISTENED.

4. WHILE APPROACHING STATION BE VIGILANT AND CAUTIOUS THAT THERE MAY BE MORE TRACK DEFECTS AHEAD.

5. AGAIN STOP THE TRAIN WITHOUT CLEARING BLOCK SECTION IN SUCH A WAY THAT ENGINE IS IN FRONT OF STATION BUILDING OR CABIN.

HANDOVER WRITTEN MEMO TO STATION MASTER.

DUTIES OF LOCO PILOTS OF SUBSEQUENT TRAINS

1. STATION MASTER WILL ARRANGE P.WAY STAFF TO ATTEND THIS.

2. IF P.WAY STAFF ARE NOT AVAILABLE THEN A CAUTION ORDER WIIL BE ISSUED TO LOCO PILOT MENTIONING Km No AND INSTRUCTING HIM TO STOP THE TRAIN ON THE SPOT AND ACCESS THE SITUATION.

(a) IF HE CONSIDERS THAT THE TRACK IS NOT SAFE THEN HE WILL STOP THERE AND WAIT TILL P.WAY STAFF ATTENDS AND RECTIFIES IT.

(b) IF LP CONSIDERS IT SAFE, THEN HE MAY PROCEED THE SPOT WITH SPEED NOT EXCEEDINGLY MORE THAN 10 KMPH.

(c) IF LP IS NOT BE ABLE TO DETECT THE FAULT, THEN ALL THE SUBSEQUENT TRAINS WITH SPEED NOT EXCEEDING 10 KMPH TILL IT IS RECTIFIED.

SR 3.16.01

SIGHTING DISTANCE

(i) When a Stop signal cannot be seen from the sighting distance on account of curves, over bridges or other local conditions, a Repeating signal shall be provided.

ii) In regard to Two-Aspect Signals including Modified Lower Quadrant signals, the minimum visibility distance for various signals shall be follows...

a) Home signals 400 meters

b) Main Starter signals 400 meters

c) Loop Starter signals 200 meters

d) Outer/Warner signals in Two-Aspects lower quadrant signaling territory only 1.2 Kilometers

iii) In regard to Multiple-Aspect signals, all signals shall be visible for a minimum period of five seconds for the maximum permissible speed allowed on the section.

HOT AXLE

WHEN ANY JOURNAL/AXLE IS SO MUCH HEATED THAT IT IS TO BE DETACHED BETWEEN STATION/ON ARRIVAL AT STATION/ON TERMINATION OF ITS JOURNEY FROM A TRAIN, IS CALLED HOT AXLE.

THE AMBIENT TEMPERATURE OF AXLE IS (67 – 90) DEGREES CELSIUS AND WHEN IT EXCEEDS BY 30 DEGREES IT COMES INTO THE CATEGORY OF HOT AXLE.

* 1st stage (between 120 – 140 degrees Celsius) – it can be known by **touching** (warming up which could be felt by the hand).
* 2nd stage (between 140 – 160 degrees Celsius) – it can be known by **smelling** (a strong smell of heated oil & waste).
* 3rd stage (between 160 – 190 degrees Celsius) – can be known by **hearing** (whistling sound).
* 4th stage (between 190 – 230 degrees Celsius) – can be known by **seeing** (molten + red hot state).
* Hot Axle may be detached in between stations & the train is required to be stopped and necessary steps are to be taken.
* If clearing of block section is possible then stops at the spot and the train may be received on Main Line with utmost caution.
* If it is not possible to receive the train on Main Line then stop at the First Stop Signal & with the instructions of Station Staff or C&W Staff, the train may be received on Loop Line very cautiously with a maximum speed of **10 Kmph**.
* If the train may proceed up to the destination, then with certain restrictions it may proceed with the permission of C&W control.
* It causes breaking of the axle which can cause derailment.
* It causes restrictions on the movement of the axle.
* Due to hot axle, sometimes iron brake blocks melts & its materials get deposited on tiers of the wheels which can cause damage to the track.
* Fire can also take place due to occurrence of hot axle.

FAILURE OF ADVANCE STARTER

(A) ABSOLUTE SYSYEM

SINGLE LINE

|  |  |
| --- | --- |
| TOKEN SYSTEM | TOKENLESS |
| 1. TOKEN IS AVAILABLE: TOKEN + T/369(3b)  2. TOKEN IS NOT EXTRACTING: PLCT (T/C1425or T/D1425) + NO ID NUMBER IS REQUIRED ONY PRIVATE NUMBER IS REQUIRED. | PLCT (T/C1425or T/D1425) + NO ID NUMBER IS REQUIRED ONY PRIVATE NUMBER IS REQUIRED. |

DOUBLE LINE

|  |  |
| --- | --- |
| LINE CLEAR IS NOT OBTAINED ON L&B INSTRUMENT | LINE CLEAR IS OBTAINED ON L&B INSTRUMENT |
| T/369(3b) + ID NUMBER | T/369(3b) + NO ID NUMBER IS REQUIRED |

B. AUTO SECTION FAILURE OF ADVANCE STARTER

SINGLE LINE

|  |  |
| --- | --- |
| DIRECTION OF TRAFFIC ESTABLISHED BUT LSS FAILED | DIRECTION OF TRAFFIC IS NOT ESTABLISHED |
| T/A 912 + T/511 | CASE 1: NO MEANS OF COMMUNICATION IS AVAILABLE---  CASE OF TOTAL FAILURE OF COMMUNICATION  T/B 602  CASE 2: MEANS OF COMMUNICATION IS AVAILABLE---  T/C 1425 or T/D 1425  +  T/A 912  +  CAUTION ORDER  +  FIRST TRAIN 25 Km/h |

DOUBLE LINE AUTO ADVANCE STARTER FAILURE

|  |  |  |  |
| --- | --- | --- | --- |
| ONLYADVANCE STARTER HAS FAILED | NO INTERVENING AUTO SIGNAL  Or  PROLONGED FAILURE OF ALL AUTO SIGNALS | TOTAL FAILURE OF COMMUNICATION  BUT  SIGANALS ARE OPERATIVE | TOTAL FAILURE OF COMMUNICATION  AND  SIGANALS ARE ALSO NOT OPERATIVE |
| T/A 912 | T/D 912  +  FIRST TRAIN 25 Km/h | TRAIN LIST  +  FIRST TRAIN 25 25 Km/h | TOTAL FAILURE OF COMMUNICATION ON DOUBLE LINE AUTO  T/B 912 |

BSLB AND SLB

|  |  |
| --- | --- |
| SLB | BSLB |
| B CLASS SINGLE LINE | B CLASS DOUBLE LINE |
| TAST, MLQ, MAST | MLQ, MAST |
| AT DEPARTURE END | AT RECIVING END |
| WHERE THER IS NO ADVANCE STARTER | WHERE THER IS NO POINT OR THE FIRST POINT IS TRAILING POINT |
| FROM OPPOSITE LINE HOME SIGNAL IT IS SITUATED AT A DISTANCE OF400 mts IN TAST AND 180 mts IN MLQ AND MAST. | FROM HOME SIGNAL IT IS SITUATED AT A DISTANCE OF 180 mts IN MLQ AND MAST |
| IT IS PROVIDED FOR DEMARCATING FREE SHUNTING AREA. | IT IS PROVIDED FOR FREE SHUNTING AREA AND FOR GRANTING LINE CLEAR |
| IT DEMARCATES STATION SECTION AND BLOCK SECTION | IT DEMARCATES BLOCK SECTION AND STATION SECTION |

A- CLASS STATION HAVE: NEUTRAL ZONE, WARNER, ONLT IN TAST

B – CLASS STSTION HAVE: OUTER, IN TAST, MAST, MLQ

TAST HAVE ALL: A - CLASS, B - CLASS, C - CLASS

MLQ SYSTEM HAVE: WARNER, LOWER QUARDRANT DISTANT

NO OUTER, NO A - CLASS

MAST: NO OUTER, NO A – CLASS, NO WARNER, UPPER QUARDRANT DISTANT

WHEN CONTINUITY TEST IS NOT REQUIRED

1. WHEN TRAIN LOCOMOTIVE IS DETATCHED FROM EXTREME END OF TRAIN.

2. WHEN TRAIN LOCOMOTIVE IS USED FOR COMPLETE BRAKE TEST OF THE WHOLE TRAIN AND IS NOT THEREAFTER DETATCHED.

3. WHEN LOCOMOTIVE OR VEHICLE IS DETATCHED FROM THE EXTREME REAR OF THE TRAIN.

WHEN CONTINUITY TEST IS REQUIRED

1. LOCO OR ADDITIONAL LOCO IS ATTATCHED IN FRONT OF TRAIN.

2. LOCO / ADDITIONAL LOCO IS ATTATCHED IN REAR OF FULLY FITTED TRAIN.

3. VEHICLE ATTATCHED IN ANY PORTION ON A TRIN.

4. VEHICLES IN FITTED PORTION OF THE TRAIN DETATCHED FROM OTHER THAN EXTREME END OF TRAIN.

5. AFTER ANY BRAKE DEFECT OR IRREGULARITY WHICH HAS AFFECTED THE CONTINUITY OF TRAIN.

WHERE GDR TEST IS REQUIRED

1. WHERE TXR STAFF IS NOT PROVIDED

2. AFTER LOADING AND BACK LOADING OF RAKE.

3. AFTER TRIPPLING.

4. AFTER LOAD HAS BEEN STABLED IN NON TXR POINT FOR MORE THAN 24 Hrs.

5. AFTER LOAD HAS BEEN STABLED IN TXR POINT FOR MORE THAN 12 Hrs.

6. IF A PREMIUM RAKE WHICH HAS BEEN LOADED / UNLOADED?

7. At NON TXR point

12 – 24 hrs. --- GDR in 45 min

24 – 96 hrs. --- GDR 90 min + Continuity test + BPC valid + Brake power %

More than 96 hrs.--- GDR 90 min + BP continuity + BPC becomes invalid+ Brake power %

8. At TXR point

12 – 24 hrs. --- GDR test in 45 min

More than 24 hrs.--- BPC becomes invalid TXR will revalidate it or will arrange afresh BPC.

|  |  |
| --- | --- |
| SIGNAL OVERLAP | BLOCK OVERLAP |
| B CLASS SINGLE LINE | B CLASS DOUBLE LINE |
| TAST, MLQ, MAST | MLQ, MAST |
| FROM OPPOSITE LINE HOME SIGNAL:  400 Mts IN TAST  180 Mts IN MLQ, MAST | 180 Mts FROM HOME SIGNAL |
| FOR LOWERING HOME SIGNAL | FOR GRANTING LINE CLEAR |
| AT DEPARTURE END | AT RECEPTION END |
| FOLLOWING ARE CONSIDERED AS EFFECTIVE SUBSTITUTE OF SIGNAL OVERLAP:  SAND HUMP, SNAG DEAD END, BUFFER DEAD END, TRAP POINT | THERE IS NO SUBSTITUTE OF BLOCK OVERLAP |

TRAP SIDING

1. It is a SAFETY SIDING

2. Increases capacity of yard.

3. It is isolated from main line by TRAP POINT.

4. It has a capacity of 5-6 wagons.

5. Sick wagons or engine is kept here.

6. It is an extension of one of the lines of yard.

SLIP SIDING

1. It is a safety siding.
2. It is provided where station section is in up gradient and block section is in down gradient.
3. It is provided to protect block section from unauthorized movement from station section.
4. It is interlocked with starter signal and trailing points are spring loaded.
5. It has a capacity of 3-4 wagons.

CATCH SIDING

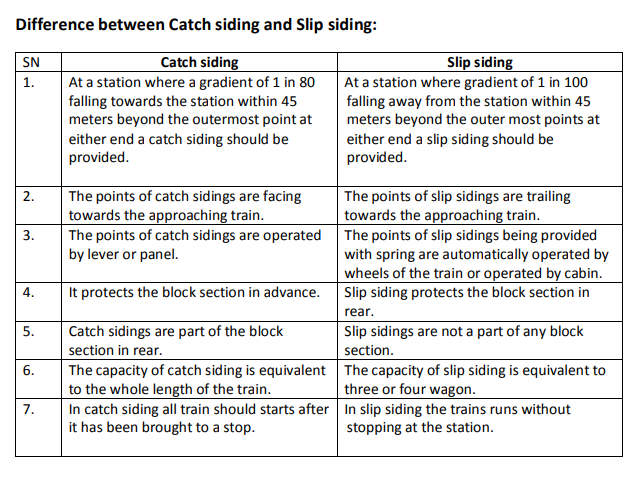
1. It is a safety siding.

2. It is provided where station section is in down gradient and block section is in up gradient.

3. It is provided to protect station section from unauthorized movement from Block section.

4. It is interlocked with home signal and trailing points are spring loaded.

5. It has a capacity of full length of train.



GHAT SECTION

**WORKING OF TRAIN IN GHAT SECTION (GR-3.50/SR-3.50-1)**

Working of train in Ghat section is mentioned in the working time table (WTT) of the Division. The detailed instructions on train operation will be incorporated in the SWR of the station situated in the Ghat section. Pre-caution to be taken while working of train in Ghat section: -

1. The marshalling of train running in the Ghat section must be as per the rules.

2. On goods train the loaded wagon should be attached next to engine and empty wagon behind it.

3. No four-wheeler shall be attached in between two eight wheeler on in between engine and wagon.

4. Train running on Ghat section should not exceed the authorized load.

5. The train should not be run without banker engine in Ghat section where such engine is to be attached as per the special instruction.

 6. Only Ghats trained Loco Pilot should work in Ghat section.

7. No empty wagon should be attached in between two loaded wagons.

8. Drivers should test the efficiency of brake power before entering the Ghats Section.

9. Trains should be fully on automatic brake (vacuum/air brake) system.

10. Train should not exceed the prescribed speed mentioned in WTT as permanent speed.

11. In the event of train stopping the train in Ghats Section for more than 10 minutes or failure of automatic brake, the train must be brought to a stop and secured by applying hand brakes and wagon wedges.

12. Lorries are not permitted to work in Ghats Sections.

Catch sidings are provided in the Ghat sections where it is mandatory to stop every train to prevent from rolling down and un-usual. Slip siding are also provided to protect the block section in rear in the event of rolling down/unusual of trains /vehicles. To avoid stopping of trains at catch sidings, speed sensing devices are provided at some stations.

At station where speed sensing device are not provided for elimination of catching halts, all trains must be brought to a stop at the stop signal protecting the catch siding. The points which are set for the catch siding should be changed only after train has come to a stop.

At location where speed sending devices are provided, the stop signals can be taken “OFF” for passing the train without stopping, provided the line clear is already obtained and it is ensured that the train has approached the stop signal at restricted speed. The Loco Pilot must obey the speed restriction till the whole train clears the catch siding point.

FLICKERING BOBBING CONFLICTING

3.74.01 - Conflicting signals

Conflicting signal shall be treated as defective and, as such, equivalent to a signal at danger or at its most restrictive aspect. For instance, if the Warner is ‘OFF’ while the Outer, or the main Home is ‘ON’; or when the Warner is taken ‘OFF’ in conjunction with the Home signal for one of the loop lines; or the distant shows Proceed/green aspect when the Home signal displays’ Yellow’ with route/lunar indication; or if one or more route/lunar indicators glow along with ‘Stop’(red), or ‘Proceed’ (green), or ‘Attention’(double yellow) aspects; or if more than one route/lunar indicators glow along with the caution/yellow aspect; or if a signal shows more than one aspect simultaneously, such signal shall be treated as conflicting and, hence, defective signals. The Loco pilot of a train on noticing such conflicting signals shall bring his train to a dead stop. The train shall then be piloted after a careful examination of points/route etc. following extant rules.

SR. 3.74.02

Frequent aspect changing and flickering/bobbing of Color Light Signal In case of a color light signal, if its aspect changes from one aspect to other, such as green to yellow/red, yellow to red/green or vice-versa or is flickering/bobbing, the loco pilot shall bring his train to a stop short of it and treat the signal as showing its most restrictive aspect. If the signal subsequently assumes a steady aspect and remains steady for 60 seconds (i.e., one minute), the loco pilot should regard it and act in accordance with the aspect so shown by the signal.

If, however, the signal continues to flicker or bob or change its aspects and does not assume a steady aspect for at least 60 seconds, the signal should be treated as defective, in this case, the train shall be piloted after a careful examination of pints/route etc. following extant rules.

At locations, where piloting stands dispensed with, such as Automatic Stop Signals, Permissive Signals, IB stop signals and gate stop signals, the loco pilot shall proceed treating the signal as if it is showing its most restrictive aspect in accordance with the rules applicable for passing of such signals at ‘ON’

SR.9.02.02. – When a Loco Pilot comes across an Automatic stop signal which is flickering / bobbing D/L

He shall treat the signal to be showing its most restrictive aspect and bring his train to a stop in rear of the signal. If the signal assumes a steady aspect and remains steady for at least 60 seconds, he shall act according to the steady aspect so displayed by the signal. But if the signal continues to flicker or bob and does not assume steady aspect for at least 60 seconds, he shall treat the signal as defective and take action in accordance with General Rule 9.02 and Subsidiary Rule 9.02.01.(See A marker, whether it is glowing or not and act accordingly)

SR.9.07.02. – When a Loco Pilot finds an Automatic stop signal flickering/bobbing S/L

He shall take action in accordance with SR 9.02.02 except that when the signal continues to flicker or bob and does not assume steady aspect for at least 60 seconds, he shall treat the signal as defective and take action in accordance with General Rule 9.07 and Subsidiary Rule 9.07.01.

SR. 9.11.05 When a Loco Pilot / Motorman finds an Automatic Stop signal with an ‘A’ Marker or a Semi-Automatic Stop signal when working as Automatic Stop signal displaying more than one aspect simultaneously other than what have been prescribed under General Rules 3.08(4) (b) in the three-aspect signaling territory and 3.08(4) (c) in four-aspect signaling territory, he shall obey the most restrictive aspect out of the aspects displayed by the signal. He shall also make a report in this regard in terms of SR 9.11.01.

REPLACING SIGNAL ON (SR3.36.02)

|  |  |
| --- | --- |
| RECEPTION SIGNAL | DEPARTURE SIGNAL |
| In emergency signal may be put in ON condition. But the route over which train would pass shall not be altered until train comes to stand before passing the relevant signal.  Point may be altered only in case to avert an accident. | Case 1: Single line token / tablet section  Signal may be put ON. But before changing route Authority to proceed (Token/Tablet) must be withdrawn from loco pilot.  Case 2: D/L line or S/L line token less  Signal may be put ON but before changing the route LP must be informed through:  (A) Secured means of communication specified under Special instruction and his Acknowledgement must be received, Route may only be changed after this.  ## Point may be altered only in case to avert an accident.  (B) Where secured means of communication is not available then before changing route LP must be informed in writing and his acknowledgement must be obtained.  After that LP and Staff will exhibit Stop signal from there and then Route may be altered.  ## Point may be altered only in case to avert an accident.  (A/C 91, 97) |

WORKING PISTON: After applying A9 handle to emergency position and BP = 00, piston which is operated properly and will remain in operational position up to 30 minutes is called Working piston.

INOPERATIVE PISTON (I.O.P)

1. DUMMY PISTON

2. ROLLING PISTON (RELEASES AUTOMATICALLY IN 5 MIN)

3. EPS (EXCESSIVE PISTON STROKE)

4. NON-GRIPPING OF BRAKE BLOCK OVER WHEEL

[PISTON STROKE: a) EMPTY N- BOX ------ 85 (+/-10) mm

b) LOADED N- BOX -----130 (+/- 10) mm

c) BMBS -----54 mm]

GR 10.01 FOLLOWING TRAIN SYSTEM

In case of Emergency, it may be adopted by Railway Boards order By Special Instruction

1. Trains may be started at an interval of 15- 15 min.

2. Maximum speed of trains will be 25 km/h.

3. There should be a maximum of 04 trains at a time in one block

Section and in each 05 km are there should be only one train.

4. Rear and Front protection will be 250-250-10 mts after 05 min

As per GR 6.03

5. Loco pilot will be served a written authority to proceed.

GR 11.01 PILOT GURAD SYSTEMS

1. Trains may be started at an interval of 15- 15 min.

2. Maximum speed of trains will be 25 km/h.

3. LP will be informed the time of departure of the previous train.

4. Authority to proceed will be red dress / Badge + Written

Authority

5. Rear and Front protection will be 250-250-10 mts after 05 min

As per GR 6.03

GR 12.01 TRAIN STAFF AND TICKET SYSTEM

1. Trains may be started at an interval of 15- 15 min.

2. Maximum speed of trains will be 25 km/h.

3. This will be implemented in S/L SYSTEM on Special

Instructions only

4. Rear and Front protection will be 250-250-10 mts after 05 min

As per GR 6.03

5. Authority to proceed will be Train staff or Ticket.

GR 13.01 THE ONE TRAIN ONLY SYSTEM

1. Authority to proceed: As prescribed by Special Instructions on

A Metallic Badge and on its both sides names to Stations will

Be engraved.

2. Fixed signals may be dispensed with.

3. 13.04. Procedure in case of accident or disablement on the one Train only system

(1) (a) PROTECTION If the train becomes disabled and require; assistance or if an accident occurs which renders it impossible for the train to proceed, the train shall be protected in accordance with the provisions of Rule 6.03 in the direction from which assistance, if necessary, is being obtained.

(b) The Guard of the train shall convey advice of the circumstance, under which the train has become disabled and is not able to proceed, to the Station Master of the station from which assistance can best be obtained, and if it is necessary for such Guard to proceed to such station, he shall instruct the loco pilot in writing to keep the train stationary until his return, and obtain his written acknowledgement.

(2) (a) Such Station Master, if he is not the Station Master of the base station, shall communicate this information to the Station Master of the base station. On receipt of such information, the Station Master of the base station may allow another engine to enter the line.

(b) The engine so sent shall either be accompanied by the Guard of the disabled train, who shall explain to the loco pilot OF RELIEF ENGINE where and under what circumstances the disabled train is situated and such other particulars as may be necessary to enter the line unaccompanied by the Guard of the disabled train.

(3) The Guard of the disabled train shall be responsible for the safe and proper working of the line until the disabled train has been moved and any other engine sent to the assistance of the disabled train has been returned to the base station.

SR. 13.04.01.– If a train becomes disabled in mid-section and is unable to proceed, the Guard shall convey a written advice of the circumstances through Assistant Loco Pilot to the Station Master of the station from which assistance can be obtained.

GRADIENTS

STEEP GRADIENT: Where there is a possibility of rolling down a stable wagon without impetus. Brass bearing 1/260 Roller bearing 1/400

RULING GRADIENT: Steepest gradient of a section According to Ruling gradient Hauling capacity of an Engine is calculated. It is mentioned in WTT.

PUSHER GRADIENT: When Gradient in a section is so much that an assistant engine is required.

MOMENTUM GRADIENT: The gradients where there is a tendency of increase of momentum by itself.

### GHAT SECTION:

### Sections approved by special instructions where there is a continuous Rising or Falling down gradients are present.

### WORKING OF TRAIN IN GHAT SECTION (GR-3.50/SR-3.50-1)

Working of train in Ghat section is mentioned in the working time table (WTT) of the Division. The detailed instructions on train operation will be incorporated in the SWR of the station situated in the Ghat section. Pre-caution to be taken while working of train in Ghat section: -

1. The marshaling of train running in the Ghats section must be as per the rules.

2. On goods train the loaded wagon should be attached next to engine and empty wagon behind it.

3. No four-wheeler shall be attached in between two eight-wheeler on in between engine and wagon.

4. Train running on Ghat section should not exceed the authorized load.

5. The train should not be run without banker engine in Ghat section where such engine is to be attached as per the special instruction.

6. Only Ghat trained Loco Pilot should work in Ghat section.

7. No empty wagon should be attached in between two loaded wagons.

8. Drivers should test the efficiency of brake power before entering the Ghat Section.

9. Trains should be fully on automatic brake (vacuum/air brake) system.

10. Train should not exceed the prescribed speed mentioned in WTT as permanent speed.

11. In the event of train stopping the train in Ghat Section for more than 10 minutes or failure of automatic brake, the train must be brought to a stop and secured by applying hand brakes and wagon wedges.

12. Lorries are not permitted to work in Ghat Sections.

Catch sidings are provided in the Ghat sections where it is mandatory to stop every train to prevent from rolling down and un-usual. Slip siding are also provided to protect the block section in rear in the event of rolling down/unusual of trains /vehicles. To avoid stopping of trains at catch sidings, speed sensing devices are provided at some stations.

At station where speed sensing device are not provided for elimination of catching halts, all trains must be brought to a stop at the stop signal protecting the catch siding. The points which are set for the catch siding should be changed only after train has come to a stop.

At location where speed sending devices are provided, the stop signals can be taken “OFF” for passing the train without stopping, provided the line clear is already obtained and it is ensured that the train has approached the stop signal at restricted speed. The Loco Pilot must obey the speed restriction till the whole train clears the catch siding point.

% OF BRAKE POWER

|  |  |
| --- | --- |
| CC RAKE ORIGINATING STATION | 100% |
| CC RAKE ENROUTE | 90% |
| ORDINARY RAKE ORIGINATING | 90% |
| ORDINARY RAKE ENROUTE | 75% |
| PREMIUM RAKE ORIGINATING | 95% |
| PREMIUM RAKE ENROUTE | 75% |
| MILITARY RAKE/ ELECTION SPECIAL - ICF COACH | 3500 KM |
| MILITARY RAKE/ ELECTION SPECIAL – LHB | 4000KM |
| DEDICATED PARCEL | 4500 KM OR 10 DAYS |
| MAIL EXPRESS ROUND TRIP – ICF COACH | 3500 KMPH |
| MAIL EXPRESS ROUND TRIP – LHB | 4000 KM |
| COACHING TRAIN ORIGINATING | 100% |
| COACHING TRAIN ENROUTE | 10% IOP OR 2 CYL ISOLATED |
| GHAT SECTION | 90% |
| CONTAINER CC RAKE | 7500 KM / 30 DAYS |
| MATERIAL TRAIN | 15 DAYS |

COMPERATIVE STUDY

|  |  |  |
| --- | --- | --- |
| CONVENTIONAL | BMBS WAGON | BMBC COACH |
| 1 HAND brake in the middle | 1 Hand brake at one end | No hand brake except SLR |
| One brake cylinder only | 2 brake cylinders | 4 brake cylinders |
| 1 hand brake and it applies to both trollies. | Hand brakes apply on one trolley only. | N/P |
| E/L device is provided | EL60 or APM is provided | N/P |
| No manual release clutch handle is provided | No manual release clutch handle is provided | Manual release clutch handle is provided |
| Heavy SAB assembly is provided | In built slack adjuster with automatic brake shoe clearance is provided | In built slack adjuster with automatic brake shoe clearance is provided |
| Brake cylinder is in the middle of the wagon | Brake cylinders are provided under bogies parallel to axle | Brake cylinders are provided under bogies parallel to axle |
| No brake cylinder isolating cock is provided | 2 Brake cylinder isolating cocks are provided | 2 Brake cylinder isolating cocks are provided |
| Works on only single pipe operation | Fit for both single and double pipe operations | Fit for both single and double pipe operations |
| No indicators on brake cylinders are provided | Red colored brake indicators are provided on BC | Red colored brake indicators are provided on BC |
| Brake cylinder is attached with Hand brake assembly | One brake cylinder is attached with Hand brake and other BC is not attached with H/Br | No H/Brakes are available. |
| No APM | APM is provided, it allows 2.2 kg/cm2 in empty condition and 3.8 kg/cm2 in loaded condition | No APM |
| E/L handle to be kept in proper position during GDR | Position of Sensor arm of APM to be ensured in proper position. | Not required |
| NP | NP | May be used in conventional as well as in Hybrid LHB coaches. |

RELEASING THE BRAKE BINDING OF AIR STOCK WAGON

i) Ensure BP pressure on engine gauge is 5kg/cm 2 and in brake van 4.8 kg/cm 2

ii) Ensure that there is no air leakage from the affected wagon.

iii) Ensure that the hand brakes of the wagon are fully released.

iv) Ensure empty/load handle is on proper position.

v) If above all items are at right and normal then release the distribution valve (DV) by pulling there leasing valve till brakes are released even after releasing the valve then isolate distributor valve by pulling the isolating handle to the isolate position and then release the QRV.

vi) If still brakes are not released, operate SAB (Slack adjuster Barrel) in anti -clockwise direction facing towards DV.

vii) If the brake binding still does not release, disconnect the SAB by taking out its connecting pins from the live lever.

viii) If still does not release, take out pin from long or short pull rod.

ix) If still does not release, remove the brake block of affected wagon.

STEPS TO RELEASE BRAKE BINDING in BMBS wagons

1. Ensure BP pressure is 5 kg/cm2 in engine and 4.8 kg/cm2 at B/van.

2. All hand brakes (which are at one end of wagon), should be in release condition. -- If there is leakage from one B.C, then isolate that BC by its isolating cock. -- Leakage from Both BC, isolate both cocks of BC, isolate & Release DV

3. Never hammer APM.

4. In BP dropped condition, orange indicator of APM should be in outside (Visible) for empty & No indicator for loaded. It is to be ensured that APM is behaving properly.

5. Leakage from APM ---- Isolate DV and release.

6. If brake blocks are changed--- Apply and release A-9 few times. The inbuilt slack adjuster will automatically adjust the brake shoe clearance to its limit. 7. If leakage from DV, isolate DV and release it.

8. For twin pipe goods BMBS wagon --- isolate BC cock, isolate DV and Release, and isolate both BP and FP cock.

9. If still unsuccessful---- remove brake block.

LHB COACH

1. FIAT BOGIE LHB COACH ---- 160 kmph

2. HYBRID LHB COACH ----------130 kmph

3. Brake application time ------ 3-5 sec

4. Brake release time ------------15 - 20 sec

5. Brake application and Release Indicators are provided.

6. Hybrid LHB in single pipe operation – speed 60 kmph

7. Air spring 7 BAR FROM Feed PIPE (I BAR = 1.02 kg/cm2)

8. If pressure is reduced by more than 1.5 kg/cm2 in both Bellow, Automatic Emergency Valve will sense and will initiate Emergency brakes with audio visual indications.

9. CTDS is provided.

10. Maximum brake cylinder pressure is 3.0 kg/cm2

11. RDSO letter LHB coach with single pipe operation then speed should be 100 km/h.

JPO REGARDING BPC S.E. RAILWAY 11.03.2020

1. BOXNHL is fit to run at with Twin pipe system at 100 km/h in empty condition and 60 km/h in loaded condition.

2. At NON TXR point

a) 0 - 12 hrs. --- BP continuity test only

b) 12 – 24 hrs. --- GDR in 45 min

c) 24 – 96 hrs. --- GDR 90 min + Continuity test + BPC valid + Brake power %

d) More than 96 hrs. --- GDR 90 min + BP continuity + BPC becomes invalid+ Brake power %

3. At TXR point

a) 0 - 12 hrs. – Only BP continuity test

b) 12 – 24 hrs. --- GDR test in 45 min

c) More than 24 hrs. --- BPC becomes invalid TXR will revalidate it or will arrange afresh BPC.

VALIDITY OF BPC OF CC RAKES

BOST- KOYAL --- 6000 KM /30 DAYS

BOXNHL – BOXN --- 8000 KM / 35 DAYS

BOXNS – BOX --- 7500 KM / 35 DAYS

BOBSN --- 8000 KM

APM --- AUTOMATIC PRESSURE MODIFICATION

1. In Empty condition sensor arm movement = 104 mm and it allows

2.2 kg/cm2

2. In Loaded condition sensor arm movement = 80 mm and it allows

3.8 kg/cm2

3. Brake cylinder contains inbuilt Slack adjuster.

4. Numbers of leavers compared to Conventional Brake cylinder has been reduced.

5. The slack adjuster will automatically adjust the brake shoe clearance to the proper value when the brakes are applied and released. This takes 2 – 3 applications.

6. To remove a brake block remove cotter pin 9 and brake head pin 8.

7. In BMBC coaches there are 2 isolating cocks for isolating brake block and one isolating cock for isolating FP.

8. If APM is malfunctioning then isolate C3W.

9. while performing GDR ensures that sensor arm of APM is properly sitting on bogie while dropping BP pressure.

TSLW

1. PWI will issue certificate that the track is fit for running TSLW.

2. SM will inform this to SCR and ASM of another end.

3. They will put the Block instrument on hold and no line clear will be given on block instrument

4. SM and SCR will exchange private number for this.

5. Block huts will be suspended and their signals will be kept in ON condition and it should be mentioned in T/D 602.

6. If there is an intermediate Block Hut between the above two stations, the same shall be treated as closed.

7. The driver should switch "on" the flasher light of the train engine while running on the wrong line.

|  |  |
| --- | --- |
| ABSOLUTE SYSTEM | AUTO SECTION |
| Authority:  T/D 602  (LINE CLEAR TICKET+ AUTHORITY TO PASS SIGNAL AT ON + CAUTION ORDER) | Authority:  1. T/C 1425(UP)  T/D 1425(DN)  2. T/A 912  3. CAUTION ORDER |
| On caution order portion ensure  1. L- Line on which train will run.  2. O - Obstruction Km number  3. S - Speed if any  4. T- Trap point if any, then it has been set and lock | On caution order portion ensure  1. L- Line on which train will run.  2. O - Obstruction Km number  3. S - Speed if any  4. T- Trap point if any, then it has been set and lock |
| Last stop signal will be kept in on condition and it will be mentioned in T/D 602 | Last stop signal will be kept in on condition and it will be mentioned in T/A 912 |
| Speed - first train 25 km/h and rest normal | Speed - first train 25 km/h and rest normal |
| Protection – As per GR 6.03 | Protection - As per GR 6.03  Because there is no discussion about it in Auto section. |
| Duties of Loco Pilot:  1. Rigidly follow Speed.  2. Be vigilant and cautious.  3. Never enter in a tunnel before ensuring it is clear for the passage of train.  4. First train will always run-in wrong direction.  5. Switch on Flasher light in Block section.  6. He will inform Gateman, Gangman etc. about S/L working. | Duties of Loco Pilot:  1. Rigidly follow Speed.  2. Be vigilant and cautious.  3. Never enter in a tunnel before ensuring it is clear for the passage of train.  4. First train will always run-in wrong direction.  5. Switch on Flasher light in Block section.  6. He will inform Gateman, Gangman etc. about S/L working. |
| Departure:  a) From right line – Last stop signal to be passed in ON and it will be mentioned in T/D 602.  b) From Wrong line – Authority will be given only after clamping points | Departure:  a) From right line – Last stop signal to be passed in ON and it will be mentioned in T/A 912.  b) From Wrong line – Authority will be given only after clamping points |
| Reception  a) Right line – HOME SIGNAL may be given, Calling ON or SPT or T/369(3b)  b) Wrong line – T/509  \*\* Even after TSLW in Home signal or Calling ON or SPT may be given as Block instrument is free to lower these signals. | Reception  a) Right line –Home signal may be lowered, Calling ON or SPT or T/369(3b)  b) Wrong line – T/509  \*\* Even after TSLW in Home signal or Calling ON or SPT may be given as Block instrument is free to lower these signals. |
| Held up at FSS  As per GR 4.44 | Held up at FSS  As per GR 4.44 |

TOTAL FAILURE OF COMMUNICATION D/L

|  |  |
| --- | --- |
| ABSOLUTE SYSTEM | AUTO SYSTEM |
| AUTHORITY: T/C 602 | AUTHORITY: T/B 912 |
| Trains will be allowed at an intervals of 30-30 min | Trains will be allowed at an intervals of 15-15 min |
| Held up at FSS- rear protection by 250-250-10 mts after 10 min | Held up at FSS – rear protection by GR 6.03 after 5 min as per GR 4.44 |
| Speed 25/10 km/h for all trains | Speed 25/10 km/h for all trains |
| On account of accident or failure , protection by 250-250-10 | On account of accident or failure , protection by GR 6.03 |

TOTAL FAILURE OF COMMUNICATION S/L

CASE-1

FROM A------B, FOR OPENING COMMUNICATION (up to FSS only)

AUTHORITY: T/B 602

1. APWLC

2. CAUTION ORDER

3. AUTHORITY TO PASS SIGNAL AT ON

4. LCEM

5. CLCM

NOTE:

a) For LE meant not for opening communication (LCEM + CLCM)

To be struck off.

b) For more than one train waiting for line clear, in addition to T/B 602, T/E 602 will also be given. (it contains details of 4 more trains).

CASE- 2

B to A, AFTER OPENING COMMUNICATION RETURNING TO PREVIOUS STATION

AUTHORITY:

1. CLCT (FOR CLCM) [ T/G 602 or T/H 602]

2. T/369(3b)

3. CLCRM (FOR LCEM)

4. CAUTION ORDER

SPEED: NORMAL

PROTECTION: 250-250-10

CASE-3

AUTHORITY:

1. CLCT

2. CAUTION ORDER

3. T/369(3b)

SPEED: FIRST TRAIN – NORMAL, Second and subsequent trains at 25/10 at an interval of 30-30 min

PROTECTION: 250-250-10

BACKING: NORMALLY backing is not allowed.

If required then backing may be done after protecting 250-250-10 in rear

DUTIES OF LP:

1. LP will clearly understand the authority

2. Rigidly follow speed.

3. Protection in case of accident.

4. Reception rules.

5. Backing if required.

GR 4.27 CRANE WORKING

1. OPM 22.28 + GR 4.27 + OPM 16.11

2. Before attaching a Crane with train, its Jib should be lowered

And it should be locked to protect it while in motion.

3. Crane should be 4rth vehicle from Engine. But when it is

Heading for accident site, rules may be relaxed.

4. Speed:

a) 10 tone Diesel Orton crane – 25 km/h

b) 140 T crane when running alone – Normal speed

c) Speed 40/15 km/h over (turnout) when attached to a train

Whether Jib is leading / trailing

T/369(1)

SR 3.69.02

(i) The Station Master of the station at which Outer, Home or Routing signal has become defective shall advise the station in rear and, also the last stopping stations for Mail, Express and Passenger trains, except in case where a signal post telephone or Calling - on signal is provided on the defective signal so that the Loco pilots of all approaching trains may be issued with the written authority on form T - 369 (1).

The stations receiving the message shall acknowledge the same supported by Private Number and also intimate the number of the first train to which T - 369 (1) is being issued

(ii) If the station in rear of the affected station, happens to be a Block Hut, the advice for issuing T - 369 (1) shall be sent to the station in rear of such block hut or block huts.

(iii) In case of goods trains form T-369 (1) shall be issued and handed over to the Loco pilot at the Station preceding the station at which signal is out of order. For this purpose, such trains shall be stopped out of course

(iv) The Station Master after sending the advice to the station in rear, shall depute a Jamadar/Points man/Token porter in uniform at the foot of defective signal with hand signals

(v) If the Outer is defective, the railway servant shall display hand signal according to the aspect of Home signal i.e. if the Home is in ‘off’ position, he shall display proceed hand signal to the approaching train (vi) if both the Outer and Home become defective or Home itself is defective, the aforesaid railway servant shall display stop hand signal from the foot of the Outer signal till such time proceed hand signal is displayed from the facing end Cabin or from the Station Platform where end cabins are not provided

(vii) When the station in rear or the last stopping station has been advised to issue T - 369 (1), the Station Master shall not give ‘Line Clear’ to the station in rear for any train unless all concerned points are correctly set, all facing points.

(viii) At a station where Outer/Home/Routing signal is defective and there is no calling on signal or signal post telephone provided on the defective signal or these are out of order and also the stations in rear have not been advised to issue T-369(1), shall be issued T - 369 (3b).

(ix) It will not be provided at:

a. Auto section

b. Previous station is a block hut or IB

c. calling ON is provided below the signal

d. SPT is provided below this signal

e. Defective in OFF

f. NO light

SPEED: Stop before the signal and after proceeds hand signal is shown from below the signal, not exceeding 15 km/h.

GR 4.48 Permission of Guard to detach engine from train - When a train has been brought to a stand outside station limits or anywhere on a grade

the Loco pilot shall not detach his engine from the train without the permission of the Guard who, before giving such permission, shall satisfy himself that the van-brakes have been put on securely and take such other measures as may be necessary or prescribed by special instructions:

Provided that detaching of engines from trains in such cases may be prohibited altogether under special instructions wherever considered necessary in the interest of safety.

SR.4.48.01

Whenever it becomes necessary for an engine, with or without vehicles, to be detached from the rest of the train, the following precautions shall be taken before it is uncoupled.

(i) Hand brakes of the brake-van, as also of other hand braked vehicles, shall be screwed on tightly.

(ii) Skids/ Sprags / Wedges, if any, shall be used.

(iii) Vacuum brake shall then be released by pulling the ball valve wires.

(iv) The Guard and the Loco pilot shall ensure, before uncoupling, that the remaining portion of the train is secure.

SR. 4.48.02.—- The Divisional Railway Manager may however, notify an incorporate in the working time table the section/ sections where detaching of engines are prohibited altogether taking into consideration the gradient and roll ability of vehicles.

GR 4.57 Detaching engine at Station-

Whenever a train has been brought to a stand, and it is necessary for the engine, with or without vehicles, to be detached from the rest of the train, the Guard shall, before the train is uncoupled, satisfy himself that the van-brakes have been put on securely and take such other measures as may be prescribed by special instructions.

SR. 4.57.01

The Loco pilot before detaching his engine from the train shall give three short whistles to call for the Guard to apply brake and to signify his intension to uncouple from the train. There upon the Guard shall take precaution to prevent the possibility of the train running away. The Loco pilot shall not detach his engine from the train nor allow it to be detached until he has received from the Guard an answer, in the form of green signal by day, and a white light by night as an assurance that the train is secured and he may proceed.

WORKING OF MATERIAL TRAIN GR 4.62

Working of a material train in a block section

A material train shall be worked only with the permission of the Station Masters on each side and in accordance with special instructions. When a material train is required to be run for Engineering purposes, the DRM shall make necessary arrangements in good time advising all concerned, the nature of the work to be done, the duration of work, and the station at which it is to be stabled daily during the period of work.

A material train shall usually work only between sunrise and sunset except under special circumstances. A material train shall not be permitted to work during thick, foggy or tempestuous weather impairing visibility.

Speed of the material train

i) The speed of a material train shall not exceed the speed laid down for goods trains with a similar load when running through between block stations, with the engine leading.

ii) Except when working with a block ticket (on an obstructed line) the speed of the material train shall not exceed 25 km/h when working between stations.

iii) When the engine is pushing a material train and the brake-van is leading the speed shall not exceed 25 KMPH on a straight line and 8 KMPH over a turn out. The Guard shall travel in the leading brake-van and continuously exhibit PHS to the Loco Pilot. The absence of PHS may be due to an obstruction and the Loco Pilot shall stop the train at once; the train crew shall keep a good look-out especially in the direction in which the train is moving and shall be prepared to stop short of any obstruction.

iv) When the engine is pushing a material train and the brake-van is not leading. The speed shall not exceed 8 KMPH/ walking speed ; The Guard shall travel in the leading vehicle and continuously exhibit PHS to the Loco Pilot.

v) When a material train allowed to work in an obstructed line the speed of the material train shall not exceed 15 kmph during day on the straight line and 10 km/h during night or where a clear view for 800m ahead cannot be obtained.

vi) Material train is not allowed to push down the grade on the sections of the line notified by the Divisional Railway Manager.

Working Hours

a) Except under special circumstances, a material train shall work only between sunrise and sunset. But the actual working hours shall be restricted to the time allowed by the section controller. The Guard shall be held responsible to ensure that the time allowed as notified in the caution order is not exceeded.

b) A material train shall not be permitted to work during thick, foggy or tempestuous weather impairing visibility (S.R.4.62.01.01).

c) A material train may run during the night from and to its stabling station without execution of any work.

d) If under special circumstances a material train is allowed to work in the night the following condition shall be fulfilled;-

i) The Engineering supervisors on the train should not be below the rank of JE (Permanent Way).

ii) Loading and unloading of rails between block stations should not be permitted.

iii) A portable generating set should be carried on the train with adequate number of flood lights so as to ensure proper lighting at the loading/ unloading points.

iv) Female labor should neither be engaged nor carried on the train.

Authority to proceed

During material train working the Station master shall give fresh “Authority to proceed” for each trip which may be in the following form,

i) On double line section when working on the proper line, on completion of work it shall proceed to the next block station in advance and return if required on the proper line or On single line it may be allowed to work in between stations and proceed to the next block station form which it is about to start, Caution order is the authority to proceed.

ii) When a material train is allowed to work and return on the wrong line on a double line section “Authority to proceed” shall be a Caution order with the following endorsement in addition:- “Block section in rear between…………..(station) and (station) has been blocked back. Private No……..”

iii) When a material train is to work in an occupied/blocked block section the “Authority to proceed” shall be “Block ticket/Authority to proceed for Relief engine/train into an occupied block section.” Which should be issued only after suspending the system of working.

iv) A caution order shall always be issued to the Loco pilot notifying the time at which the block section must be cleared and whether the train has to proceed to the next station or has to return to the same station from which it is about to start.

Protection

i) When a material train is working between station protection shall be done in both the directions on single line and in the direction of traffic on double line, with a banner flag and three detonators as per SR.15.09.01(a)[BF At 600m – three detonators 1200m – 10m – 10m and a competent man shall exhibit a red hand signal at a distance of 45m.] whenever the train comes to a stand for a period of over 15 minutes or in the event of any other train approaching on the same line.

ii) Protection of material train when stabled at station section shall be done as per S.R.5.23.01.

**A. Brake Feel Test:**

1. 1. To be done immediately after start at the station where the crew have taken over charge
2. 2. On attending the speed about 15 Km/h shall drop the BP pressure by 0.5 Kg/cm2 through A-9 and release
3. 3. LP should feel the application of brake & speed should drop to about 10 Km/h
4. B. **Brake Power Test:**
5. 1. To be done at first block section (or first opportunity)
6. 2. Speed of the train should reach 60 to 70 Km/h in case of Coaching train & 40 to 50 Km/h in case of Goods train
7. 3. LP shall drop BP pressure by 1 Kg/cm2 in coaching train and loaded goods train and 0.5 Kg/cm2 in case of empty goods train through A-9 and release after a small pause
8. 4. The speed of train should drop 30 to 40 Km/h in coaching train & 20 to 25 Km/h in goods train by the time pressure comes back to 5.0 Kg/cm2
9. 5. The LP shall observe the effectiveness of Brake and Brake power of the train
10. 6. As the AFL needle comes to ‘0’ or previous reading normal traction shall be resumed
11. C. **Duty of ALP during Brake Feel Test & Brake Power Test:**
12. 1. ALP shall keep watch & ensure that the test are done by LP and will remind him for the same if required
13. 2. He will equally participate (carefully watch) in Brake Feel & Brake Power Tests to access the effectiveness of the braking system of the train and confirm the same to LP
14. D. **Duty of Guard of train in regard to Brake Feel Test & Brake Power Test:**
15. 1. Guard must watch the speed of the train during Brake Feel & Brake Power Tests if required he shall ask the Loco Pilot to conduct above tests
16. 2. He shall also make an entry in the T-34HF about conducting above test
17. 3. Guard shall assist the Loco Pilot by the use of brake van valve and hand brake, if required

**Note**:

1. Crew shall ensure observation of signal aspects while performing Brake Feel & Brake Power Tests

2. In case of up gradient in the first block section suitable guidelines will be issued by the division as per safe condition to avoid stalling

SR. 4.22.01

In addition to the engine crew the following persons may ride on the engine or locomotive or any driving compartment of EMU trains or of electric or diesel locomotive:

(a) An Officer holding a metal pass.

(b) An Officer or Inspector whose pass is specially endorsed by the chief Electrical Engineer/Chief Mechanical Engineer/Divisional Railway Manager.

(c) Guards in an emergency.

(d) Traffic staff when performing shunting or when piloting. (e) Staff proceeding to attend an accident.

(f) “Normally not more than 3 (three) Persons other than the Engine / Train Crew shall be permitted to travel in the Cab.

T/A 912

**Question no. 1- Is there any difference of rules in NFR and SER regarding Auto section working?**

**ANS - No. only speed of T/D 912 is different.**

**Question no 2 – What is the correct authority for the situation arise at the site of accident?**

**ANS - T/D 912 with private no. and ID no. Refer the first photo of correction clip of NFR railway page 89.**

**Question no 3 – What is the speed of T/A 912 when issued to a loco pilot?**

**ANS – not exceeding 15/10 kmph.**

**Refer the rule 9.14.01 (b)**

**Question no 4 – What is the speed of T/D 912 when issued to a loco pilot?**

**ANS – In SER speed of first train is 25 kmph and normal speed for following trains where as in NFR speed is restricted for all trains running with T/D 912 is 25/10 kmph.**

**Question no 5 – Is it possible to issue T/A 912 to a loco pilot for Mid-section auto signals?**

**ANS – normally this authority is to be used to pass defective stop signals at station. But many of confused by the written content of T/A 912, which authorizes to pass auto stop signal between two stations. The same mistake has been committed by SM in NFR railway.**

**Question no 6 –when T/A 912 issued to a loco pilot for Mid- section auto signals?**

**ANS – T/A 912 may be issued to pass mid-section auto stop signals only in conjunction with other authority when situation warrants.**

**example-**

**When TSL working introduced and T/C 1425 PLCT is issued, T/A 912 also issued to pass all auto stop signal in between station.**

**Question no 6 –when T/A 912 issued to a loco pilot for Mid- section auto signals what should be the speed of train?**

**ANS – it totally depends up on the authority he possesses to enter in to the block section. If it is PLCT, then speed may be normal after first train. But if a loco pilot has been issued T/B 602, then speed of the train /light engine must be 15/10 kmph.**

9.02. Duties of Loco pilot and Guard when an Automatic Stop signal on double line is to be passed at ‘ON’

(1) When a Loco pilot finds an Automatic Stop signal with an ‘A’ marker at ‘ON’, he shall bring his train to a stop in the rear of the signal. After bringing his train to a stop in the rear of the signal, the Loco pilot shall wait there for one minute by day and two minutes by night. If after waiting for this period, the signal continues to remain at ‘ON’, he shall give the prescribed code of whistle and exchange signals with the Guard and then proceed ahead, as far as the line is clear, towards the next Stop signal in advance exercising great caution so as to stop short of any obstruction. Speed 15/10 km/h

SR. 9.02.01 (a) When a Loco pilot finds an Automatic Stop signal with an ‘A’ Marker at ‘on’, he shall, while bringing his train to a stop in rear of it, draw his train as close as possible in rear of the signal. (b) (i) After the signal has been passed at ‘On’ speed 15/10

9.07. Duties of Loco pilot and Guard when an Automatic Stop signal on single line is to be passed at ‘ON’

(1) When a Loco pilot finds an Automatic Stop signal with an ‘A’ market at ‘ON’ he shall bring his train to a stop in rear of that signal and wait there for one minute by day two minutes by night.

SR. 9.07.01 (a) When a Loco Pilot finds an Automatic Stop Signal with an ‘A’ Marker at ‘on’, he shall, while bringing his train to a stop in rear of it, draw his train as close as possible in rear of the signal speed 15/10

SR 9.14.01

1. In case of Semi-Automatic Stop signal governing the approach of a train to a station when working as a manual Stop signal and becomes defective it shall be passed only in accordance with the procedure detailed in SR 3.69.03.
2. At stations on the Automatic Signaling territory (Double Line) when the last stop signal which may either be a Manual Stop signal or a Semi-Automatic Stop signal working as a Manual Stop signal governing the departure of a train from a Station becomes defective, the Station Master shall handover to the Loco Pilot a written authority on the prescribed form T/A-912; authorizing him to pass such signal at ‘on’ or when defective the written authority shall not be given, unless all the points for the departure of the train have been set and the facing points locked. Hand signal shall also be shown to the departing train in accordance with General Rule 3.70. The Loco Pilot after passing such signal at ‘on’ or when defective, shall take his train up to the next signal in advance in the manner as laid down in General Rule 9.02 and subsidiary Rule [9.02.01 (b)](E:\\SSA MATERIALS\\T\\A912) 9.02.01(b) (i) After the signal has been passed at ‘On’ and while taking the train under sub-rule (1) of General Rule 9.02, the Loco Pilot shall so regulate the speed of his train so as to be able to stop within half the distance up to which the line ahead can be seen clearly. But in any case, subject to the observance of speed limit prescribed under sub-rule (3) of General Rule 9.02, the speed of the train shall NOT exceed 15 kilometers per hour even in normal conditions of visibility until the next Stop signal is reached looking out for any possible obstruction/train and be prepared to stop short of the same. In all cases after passing an Automatic Stop signal at ‘On’, the Loco Pilot of the following train shall ensure that a minimum distance of 150 meters or two clear OHE masts is maintained between his train (in clear weather) and the preceding train, if any, or any obstruction on the line ahead. However, in the case of EMU trains the minimum distance of 75 meters or one OHE mast shall be maintained between EMU train and a preceding train if any or any obstruction on line ahead. However, during dense fog, after passing an Automatic Stop Signal at ‘On’ (Red), the Loco Pilot / Motorman of the train hauled by any locomotive including EMU train shall, while moving at a speed not exceeding 10 kmph, should ensure that he maintains a reasonable distance at which he is able to observe the flashing tail lamp of the train ahead or the obstruction, as the case may be. While doing so he may control the speed of the train/EMU, MEMU, DEMU etc. so as to be able to stop adequately short of the train or obstruction. In special circumstances like floods etc. The following train may of course, be pulled closer to the preceding train or obstruction. Provided that, where there is / are no intervening Automatic / Semi-Automatic Stop signal(s) between two consecutive stations, action shall be taken in accordance with subsidiary Rules 9.12.01 for passing trains.

SUMMERY

1 There is no mention of any speed for T/A 912 alone. Although speed is mentioned in SR 9.02.01(b), when it is served alone for station section signals.

2. Alone T/A 912 will be issued for Station section signals only.

3. Alone T/A 912 will not be issued for signals in block section.

4. For block section T/A 912 will be issued with any other authority like T/B 602, T/C 1425, and T/D 1425.

5. When issued with any other authority speed will be according to that authority.

6. On T/A 912, it is mentioned that it may be given for GOVERNING/ NON-GOVERNIMNG/ MANNUALLY OPERATED / GATE STOP SIGNALS… (SR. 9.12.03.(k) (ii) an authority on prescribed form T/A 912 authorizing the Loco Pilot to pass the intervening non-governing / governing Automatic; Semi-automatic and manually operated signals provided that the Semi-Automatic and Manually operated signals shall be hand signaled past by a Points man / any other competent railway servant in uniform deputed for the purpose. The distinguishing number of each signal shall be indicated on this authority. In case of Semi-Automatic gate signal the train shall be drawn cautiously up to the level crossing where the Loco Pilot shall ascertain that the gates are closed and locked and ‘Proceed’ hand signal is displayed by the Gateman at the level crossing before he proceeds further. The Loco Pilot shall also ascertain that the points of the outlying sidings are correctly set and locked and proceed hand signal is displayed at such points by a complete railway servant before passing over them.)

7. Speed is not mentioned on the authority because it may be provided with any other authority and LP will follow the speed according to that authority.

8 Although speed is mentioned in SR 9.02.01(b), when it is served alone for station section signals.

DIFFERENCE BETWEEN T/A 912 & T/D 912

|  |  |
| --- | --- |
| T/A 912 | T/D 912 |
| Mainly for starter, A/S, Home | For signals of block section |
| May also be given for Block section but in addition with other authority. | Never for signals of Station sections. |
| Speed is not mentioned on the authority because it may be provided with any other authority and LP will follow the speed according to that authority. | Speed 25 km/h for First train only. |
| On T/A 912, it is mentioned that it may be given for GOVERNING/ NON-GOVERNIMNG/ MANNUALLY OPERATED / GATE STOP SIGNALS…  THESE ARE MISLEADING (SR. 9.12.03.(k) (ii) an authority on prescribed form T/A 912 authorizing the Loco Pilot to pass the intervening non-governing / governing Automatic; Semi-automatic and manually operated signals provided that the Semi-Automatic and Manually operated signals) | There is no misleading language in this authority. |
| For block section T/A 912 will be issued with any other authority like T/B 602, T/C 1425, and T/D 1425, TSLW auto. | This authority is never given with any other authority. |
| Speed 15/10 when issued for starter, A/S, Home | 25 km/h for first train to confirm that there is no Rail Fracture. |
| Here Auto section remains auto section | Here Auto section behaves like ABSOLUTE section. |
| No need to take line clear. | Line clear on electronic instrument is required. |
| Only Private Number is required. | Private Number + ID number are required. |
| It’s blue in color. | It’s Red in color. |
| It may be given for Reception or Departure signals. | It is given for Last stop signal, and signals in block sections. |

9.06. Conditions for taking ‘OFF’ Manual Stop signals in Automatic Block territory on Single line

(1) Home signal— when a train is approaching a Home signal otherwise than at terminal station, the signal shall not be taken ‘OFF’ unless the line is clear not only up to the Starter but also for an adequate distance beyond it.

(2) Last Stop signal— The last Stop signal shall not be taken ‘OFF’ for a train unless the direction of traffic has been established and the line is clear up to the next Automatic Stop signal, or when the next Stop signal is a Manual Stop signal for an adequate distance beyond it.

a. Line should be clear up to Block overlap

b. Direction of traffic has been established

c. Now trains will run as per auto section

B. Rules applicable to Single Line 9.03.

Essentials of the Automatic Block System on single line

(1) Where trains on a single line are worked on the Automatic Block System.—

(a) The line shall be provided with continuous track circuiting or axle counters,

(b) The direction of traffic shall be established only after Line Clear has been obtained from the block station in advance.

(c) A train shall be started from one block station to another only after the direction of traffic has been established.

* It shall not be possible to obtain Line Clear unless the line is clear, at the block station from which Line Clear is obtained not only up to the first Stop signal but also for an adequate distance beyond it.

MID SECTION SEMI AUTOMATIC (MSA)

1.Under special instructions, one of the automatic stop signal between two stations in the automatic block signaling territory In each direction may be made as modified semiautomatic stop signal;

2. (a) The mid-section modified semi-automatic stop signal so provided shall be interlocked with the signals of the station ahead through track circuits or axle counters or both and shall be controlled by the Station Master of the station ahead

(b) The relevant indications whether the signal is in normal automatic mode or modified semi-automatic mode shall be available to the Station Masters at both the ends

3. Advanced starter signal of the station in rear shall be interlocked with the mid-section modified semi-automatic stop signal in such a way that when working with 'A' sign extinguished, the Advanced starter shall assume 'off’ aspect or be taken 'off’ only when the line is clear up to an adequate distance beyond the mid-section modified semi-automatic stop signal

4. Similarly the mid-section modified semi-automatic stop signal shall assume 'off’ aspect automatically or be taken 'off’ only when the line is clear up to an adequate distance beyond the Home signal of the station ahead

5. During abnormal conditions like fog, bad weather impairing visibility, the mid-section modified semi-automatic stop signal may be worked by extinguishing 'A' marker in the manner prescribed under special instructions and this action shall also ensure that the 'A' marker of the Advanced starter signal of the station in rear and Home signal of the station in advance shall also be extinguished

6. During normal conditions, mid-section modified semi-automatic stop signal shall work as normal automatic stop signal.

(a) When the Loco Pilot finds mid-section modified semiautomatic stop signal with 'A' marker extinguished in 'on' position, he shall stop his train in the rear of the signal and inform this fact to the Station Master of the station ahead on approved means of communication as prescribed under special instructions;

(b) the Station Master of the station ahead may authorize the Loco Pilot to pass the mid-section modified semi-automatic stop signal working with 'A' marker extinguished in 'on' position through approved means of communication after ensuring conditions and procedure prescribed under special instructions;

(c) in case the Loco Pilot is unable to contact the Station Master of station ahead, he shall pass the signal at 'on' after waiting for five minutes at the signal and proceed cautiously and be prepared to stop short of any obstruction, at a speed not exceeding ten kilometers an hour up to the next Signal and act as per aspect of this signal; and (d) the Loco Pilot shall report the failure of mid-section modified semiautomatic stop signal to the Station Master of the station ahead.

PUSH BACK IN AUTO SECTION

SR 9.13.01

When a train is required to be pushed back, the procedure laid down in SR 4.12.01 shall be followed.

4.12. Engine Pushing

(1) No engine or self-propelled vehicle shall push any train outside station except in accordance with special instructions and at a speed not exceeding **25 kilometers an hour**: Provided that this sub-rule shall not apply to a train the leading vehicle of which is equipped with driving apparatus and which may be operated under approved special instructions. Provided further that this sub rule shall not apply to an engine assisting in area of a train, which may be permitted under approved special instructions to run without being coupled to the train, Provided also that no train which is not equipped with continuous vacuum/air brake shall be pushed outside station limits except in case emergency.

(2) Provided further that a ‘Patrol’ or “Search light” special with one or more vehicles in front of the engine may be permitted to run at a maximum speed of 40 kilometers an hour.

(3) For movement of trains outside station limits with engine pushing during night or in thick, fogy or tempestuous whether impairing visibility, or where other-wise prescribed by special instructions, the leading vehicle of such train shall be equipped with prescribed head light and marker lights except in case of emergency.

(4) When trains are working as described in sub rule (1) and (2), the engine pushing the load when it is the rearmost, or the rear most vehicle if any, shall carry a tail board or a tail lamp.

SR. 4.12.01.-(a) Whenever due to unavoidable circumstances, it becomes necessary for a train other than a train which has been permitted in advance to work and return on the same line back to the station from which it left with the engine pushing it

, the Guard may authorize the Loco pilot to do so by issuing a written memo Provided-

(i) He received an assurance from the Station Master of the Block Station from which the train has left, either

(a) on the portable telephone, if available, or

(b) by sending the Asst. Guard / Assistant Loco Pilot or any railway servant as may be available, to the nearest Station Master to obtain written permission or

(c) by sending information through the Guard/ Loco pilot of any train passing over the adjacent line with the request to send the written permission through one of the station staff.

(ii) The Guard and Loco Pilot shall comply with the provisions of sub-rule (2) and (3) of General rule 4.12

(iii) After permission to push back is obtained, at night or if the view ahead is not clear the Asst. Guard /Assistant Loco Pilot any other competent Railway servant be sent with Hand signal who shall proceed at an adequate distance in advance of the leading vehicle to pilot the train, and

(iv) The Guard shall travel in the leading brake van ensuring caution and shall be prepared to apply the brakes as the circumstances may warrant. Provided that if the leading vehicle is not a brake van, the Guard shall travel in the leading vehicle or nearest vehicle thereto which is fitted with means to bring the train to a stop. (b) The Loco Pilot may push back the train at a walking pace and shall bring it to a stop outside the First Stop Signal on single line section or the First Stop Signal pertaining to the correct line/Last Stop Signal pertaining to the wrong line whichever the leading vehicle may come across first on a double line section. When the train is piloted in terms of a Para (iii) of sub-rule (a) above, the pilot man shall assist the loco pilot by showing Stop hand signal short of the aforesaid signal. (c) The pilot man must show Stop hand signal short of the (i) First Stop signal on single line section, or (ii) First Stop signal pertaining to the correct line/last Stop signal pertaining to the wrong line whichever the leading vehicle may come across first on a double line section so as to enable the Loco Pilot to bring the train to a stop. After the train has been brought to a stop the Loco Pilot shall sound the Engine whistle thus “\_\_\_\_\_\_”. The Station Master may receive the train in the manner normally laid down for reception of the train but in case of a train pushing back on the wrong line on a double line section, reception should be arranged in the same manner as when single line working is introduced on the double line section.

4.20. Manning of engine in motion

(1) Except when otherwise provided by special instructions, no engine shall be allowed to be in motion on any running line unless the Loco pilot as also the Assistant Loco pilot are upon it.

SR. 4.22.01

In addition to the engine crew the following persons may ride on the engine or locomotive or any driving compartment of EMU trains or of electric or diesel locomotive: -

(a) An Officer holding a metal pass.

(b) An Officer or Inspector whose pass is specially endorsed by the chief Electrical Engineer/Chief Mechanical Engineer/Divisional Railway Manager.

(c) Guards in an emergency.

(d) Traffic staff when performing shunting or when piloting.

(e) Staff proceeding to attend an accident.

(f) “Normally not more than 3 (three) Persons other than the Engine / Train Crew shall be permitted to travel in the Cab.

SR. 4.22.02.(a)

If a Loco Pilot has not driven an Electric Engine or single/Multiple unit train for Six months, he shall be re-examined after a refresher course and his certificate of competency endorsed before he is allowed to drive again

SR 4.12.01

(a) Whenever due to unavoidable circumstances, it becomes necessary for a train other than a train which has been permitted in advance to work and return on the same line back to the station from which it left with the engine pushing it, the Guard may authorize the Loco pilot to do so by issuing a written memo Provided received assurance from SM. Speed --- Walking

SR. 4.32.01

Assistant loco pilot, when available in the engine, shall couple up the engine on train and uncouple engine from trains. In all other cases the responsibility of coupling and uncoupling of engines shall devolve on traffic staff.

SR. 4.35.01

At terminal, junction, engine-changing and meal serving stations with a halt of 10 minutes or over, a warning bell shall be sounded five minutes before the starting time of a passenger train.

SR. 4.35.04

No goods stock shall be used for carrying passengers without the previous sanction of the General Manager.

6.05. Sending advice of accident or break down

If the engine is, for any reason unable to proceed, the Guard or in his absence the Loco Pilot, shall convey, by the most expeditious means, advice to the nearest station, stating the location, nature and cause of the accident and if assistance has been asked for, the train shall not be moved until such assistance arrives, provided that if the train is subsequently able to move, it may do so at walking pace, but not unless a competent railway servant has been sent with hand signals and detonators to protect the train, such railway servant keeping at least 400 meters in advance of the train, the other end of the train being protected in a similar manner.

SR. 4.57.01

The Loco pilot before detaching his engine from the train shall give three short whistles to call for the Guard to apply brake and to signify his intension to uncouple from the train. There upon the Guard shall take precaution to prevent the possibility of the train running away. The Loco pilot shall not detach his engine from the train nor allow it to be detached until he has received from the Guard an answer, in the form of green signal by day, and a white light by night as an assurance that the train is secured and he may proceed.

SR. 5.13.01

Fixed signals that can be used for control of Shunting are starters (other than the Last Stop Signal), Calling-on signals and Shunt signals.

SR. 5.13.04

Whenever any engine with or without vehicle/vehicles is to be attached on to a train carrying passengers for the purpose of either attaching/detaching of vehicles/coaches or while attaching train engine, the engine must first come to a halt at least 20 meters away from the train and then shall come on to the train with great caution.

SR. 5.14.02

Whenever shunting on a through goods trains is to be performed at stations for the purpose of detaching or attaching a vehicle or vehicles, the person in charge of shunting operation shall satisfy himself that effective hand brakes of at least 15% of wagons of the trains not involved in shunting operation are pinned down, before shunting is commenced.

6.04. Trains unusually delayed overdue train

If a train carrying passengers does not arrive within 10 minutes or if a goods train does not arrive within 20 minutes after allowing for its normal running time from the station in rear, the Station Master at the station in advance shall immediately advise the station in rear and the Control of this fact.

SR. 15.05.10 OVER DUE PETROLMAN

If a Patrolman does not turn up within 15 minutes of his scheduled arrival, the Station Master on duty shall take the following action(c) He shall issue a Caution Order in form T\B409 to every train proceeding into the Block Section, advising the Loco Pilot to be on the alert and to observe a speed restriction of 40 Km/h during the day when visibility is clear and 15 km/h during the night or when visibility is impaired.

SR. 15.17.01 (a) if a rail is badly fractured

No train shall be allowed to pass over the affected portion of track until the fractured rail is replaced or otherwise made safe by an official not below the rank of PWI and certified fit by him. (b) For the purpose of sub-rule (a), a rail shall be considered badly fractured when

(i) A gap of more than 75 mm (25 mm in the case of outer rail of a curve) has been formed in the rail head portion, or is likely to be formed, either due to the breaking off of a portion of the rail or due to the broken rail ends moving apart, thereby affecting the continuity of support and guidance for wheels.

(ii) There is more than one fracture in a length of 1 m measured along the rail head.

(iii) A length of more than 150 mm of the rail foot is broken off or is likely to break off completely under the passage of wheels.

(iv) The fracture, irrespective of its nature, has occurred on a girder bridge.

SR. 15.17.02

(a) In case of a rail fracture less serious in nature than what has been indicated in SR 15.17.01, the Mate/ Key man may allow trains at a speed not exceeding 20 KMPH

SR. 15.17.04 RAIL CLOSURE

If, for any reason, it is necessary to insert a rail closure of length shorter than 5.5 m in a running track, the speed over it shall be restricted to 15 km/h

16.08. Parting of a train

If a Gateman notices that a train has parted, he shall not show a Stop hand signal to the Loco Pilot, but shall endeavor to attract the attention of the Loco Pilot and the Guard by shouting gesticulating or other means.

OPM

INTERLOCKING - Interlocking means an arrangement of signals, points and other appliances, operated from a panel or lever frame, so inter-connected by Mechanical locking or Electrical locking or both so that their operation must take place in proper sequence to ensure safety.

Types of Interlocking

i) Mechanical Interlocking. ii) Panel Interlocking (Relay) iii) Route Relay Interlocking iv) Solid State Interlocking.

Indirect and Direct Interlocking

(a) Indirect interlocking means that the points are set and locked from one place and the signals are operated from another place and another lever frame; the interlocking is effected by means of keys carried from one place to the other.

(b) Direct interlocking means that all levers, viz. the point, the point locks and the signal levers are concentrated in one lever frame and worked therefrom; the interlocking is effected by means of rigid connections between levers without the use of keys.

STANDARD OF INTERLOCKING

Standard I

(i) Speed - 50 km/h (ii) Isolation - Isolation of the main line is recommended, but is not essential.

Standard II

(i) Speed - 110 km/h. (ii) Isolation of the main line is essential.

Standard III

(i) Speed – 140 km/h Unrestricted speed. (ii) Isolation - same as for Standard II. (iii) Interlocking: - the interlocking between points and signals must be direct.

Standard-IV

(i) Speed up to 160 km/h (ii) Isolation – as per Standard III

Isolation (OPM)

A line is said to be isolated from the adjacent line or lines when no movement on the adjoining lines can foul it. Isolation can be achieved by any of the following methods.

(a) Snag dead end,

(b) Sand hump,

(c) Trap points,

(d) Setting of points

(e) Permanently locked points,

(f) Scotch Block and

(g) Hay’s Derail.

(h) Derailing Switch.

Note

For the purpose of definition of Isolation (f) scotch block and (g) Hay’s derail are not means of Isolation.

(a) Snag Dead End

(i) This is an extended portion of track with an erected obstruction with buffers at the end.

(ii) The length is at least 180 meters.

(iii) This is used to isolate main line from loop line.

(iv) This is an efficient substitute for signal overlap.

(b) Sand Hump Sand hump is an extended portion of rail embedded in sand. It is total 60 m in length, with increasing gradient of 1 in 60, of which the first 30 m is laid with normal track embedded in sand and remaining 30 m is an earthen lump of uniform 4 m width. This is an efficient substitute for signal overlap.

(c) Trap Points (i) this is a single rail cut. (ii) This rail cut will be away from the adjacent line. (iii) To provide isolation, the trap point will be open. (iv) When it is open and if a vehicle moves the vehicle will derail. (v) This is provided to isolate running line from non-running line and main line from loop line.

(d) By setting of points: At interlocked stations, isolation can also be obtained by setting of points.

(e) Permanently locked points certain points, including traps are kept permanently locked and (ii) The keys for these points are kept in on duty station Master custody. (iii) These points have to remain set and locked in normal position. (iv) These keys are handed over, when these points are required to be worked.

(f) Scotch Block (i) A lump of log covered with iron sheets and coloured red. (ii) This will be connected with a chain tied up on the earth. (iii) This is a place across the rail and locked to prevent vehicles moving away. (v) If the vehicle moves the vehicle will derail. (vi) This is used normally to isolate running line from non-running line.

(g) Hayes Derail It is a device designed to limit the movement of free rolling, uncontrolled wagons/ vehicles. This is accomplished by grinding the flange of a wheel up and over the railhead, dropping the wheel clear of the rail on outside of the rails. The wheels lodging in the tie cribbing and ballast halt movement of wagons /vehicles.

(h) Derailing Switch this is an extended portion of track ending with some sand. The distance from the points is about 15 feet. • This is used to isolate main line from loop line. • This is an efficient substitute for signal overlap under approved special instructions. • The normal setting of points is for derailing switch. • If the vehicle moves, the vehicle will derail on the sand at the end of the derailing switch. • Simultaneous reception is possible with CRS permission. • This should not be obstructed.

WORKING OF TRAINS… PAGE 29

To facilitate passengers boarding, generally an important long distance passenger train should be placed on the platform 30 minutes/15 minutes before its scheduled departure, depending upon the terminal layout.

Every Loco pilot of a train while starting from the starting station must verify adequacy of brake power as certified in train examination document

In addition, he must conduct a “feel test” to ensure that train brakes respond to brake application.

In case of failure, he will report to the control and bring his train to a stop as directed by the Control.

The train shall move only after the defect has been rectified.

LR (OPM)

No Loco Pilot, Assistant Loco Pilot or loco pilot of any self-propelled vehicle shall be booked to work a train or to drive a vehicle until he has learnt the road and shall give a declaration that he is fully acquainted with it. For this purpose he will be booked to work three round trips on each section including one during night before being put to work the train/vehicle independently.