

वसुषेव कुदुम्बकम्

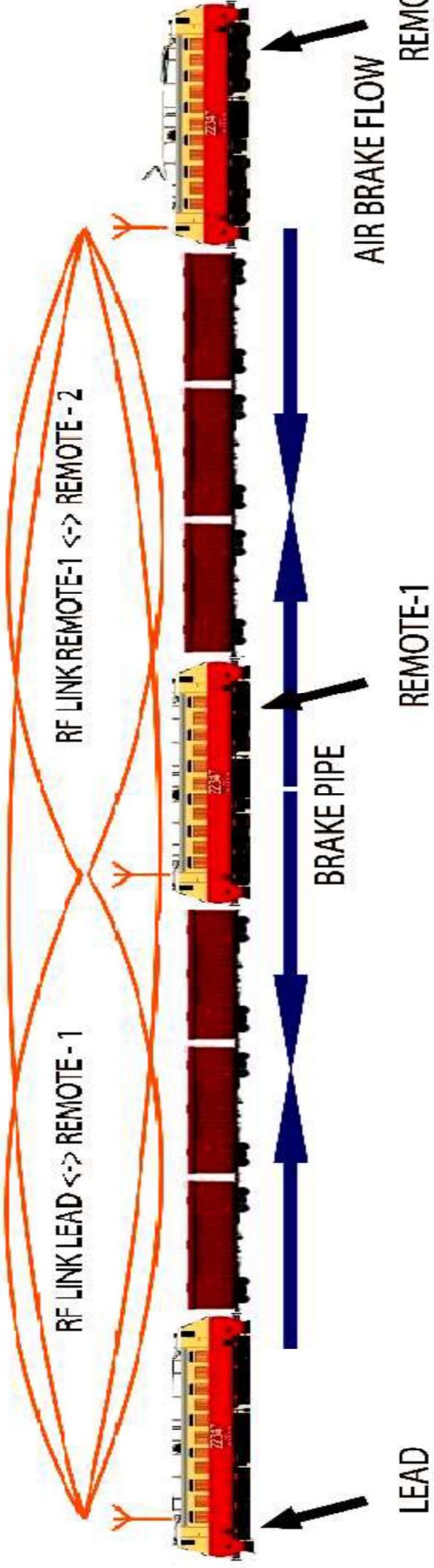
ONE EARTH • ONE FAMILY • ONE FUTURE

LONG HAUL RAKES



SREENIVASULU CHEVURU/Sr.INSTRUCTOR/ZRTI/MILY/S

Monday, 03 November 2025



A PRESENTATION ON GUIDE LINES FOR OPERATION OF LONG-HAUL TRAINS

What is Long Haul Train?

Composition of More

than one standard rake

What is standard rake?

Standard Rake size (Block Rake with a wagon composition) is as notified by Railway Board

COMPOSITION OF BLOCK RAKES

BOXN-59

BOBRN-59

BTAP-51

BCFC-59

BTPN-50

BTCS-59

BOST-46

BOXNHL-58

BRN-43

NMG-25

NMG-25
BTPGLN/BTPG-32

BCCW-58

NAMES OF LONG-HAUL TRAINS

- **Trishul** is SCR's first long haul comprising of three freight trains, i.e., 177 wagons.
- **Garuda** – long haul –SCR
- The **Super Vasuki** is India's longest-loaded train stretching across 3.5 km. The freight train runs with six locos and 295 wagons. (SECR)
- **Sheshnag** – long haul –SECR
- **Rudrastra** – ECR (AUGUST-2025)

ABBREVIATIONS

DIESEL LOCOMOTIVES

- ❖ DPCS –DISTRIBUTED POWER CONTROL SYSTEM
(Through RF communication)

ELECTRIC LOCOMOTIVES

- ❖ DPWCS –DISTRIBUTED POWER WIRELESS CONTROL SYSTEM (Through RF communication)

Monday, November 3, 2025

SCREENVASULU CHEVURU/SR.INSTRUCTOR/ZRT/MLY

TWO FREIGHT TRAINS AMALGAMATED INTO

ONE TRAIN

NOMENCLATURE: (PRE-FIX)

- LOCOs Manually controlled without DPWCS is called **PythonM rakes**
- LOCO'S Controlled through DPWCS is known as **PythonW rakes.**

CONDITIONS FOR FORMATION (COMBINATION) OF

LONG HAUL TRAINS

The following combination is permitted:

FRONT PORTION	REAR PORTION
EMPTY	EMPTY
LOADED	EMPTY
LOADED	LOADED

Difference between Conventional and DPWCS Enabled Train

Conventional Train

With Conventional Train the Tractive Force is applied from the front due to lack of synchronizing possibility between the Locomotive.

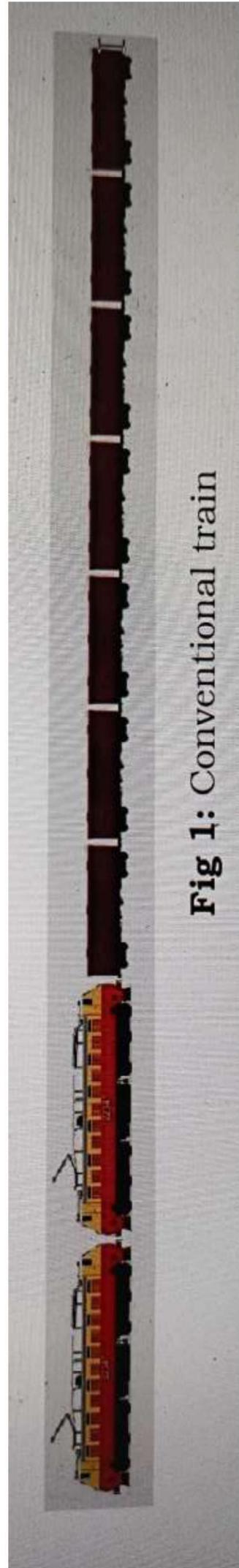


Fig 1: Conventional train

Difference between Conventional and DPWCS Enabled Train

DPWCS Enabled Train

DPWCS Enabled Train With DP Enabled Train, the locomotives can be anywhere in the train consist as all the locomotives are synchronized over the radio link.



Fig 2: DPWCS enabled train

Precautions for formation

- **All types of stock permitted** – Except BTPN, BTPGLN and wagons containing hazardous substance
- With **valid BPC** only at the time of formation : Responsibility lies on LP and Train manager where not possible to depute TXR.
- **Twin pipe:** If both the trains are having twin pipe mode trains have to work in twin pipe mode only.
- One train with twin pipe and another train with single pipe then train to be worked on **single pipe mode** only.

- Rear formation should have Brake van, and train manager and he should possess BP and FP gauge (**MANDATORY**)
 - Pre tested and adequate battery power walkie-talkie sets to be provided to LP and TM and train examining staff, in case of failure proper whistle code to be used.
 - Proper locomotives to be planned according to the local conditions of the zonal railways.
- For PythonM rakes all the locos shall have full crew i.e., LP and ALP**
- For PythonW rakes slave loco manned by LP only**

Precautions for forming long haul rakes

1. To prevent rolling down of trains pinning down of hand brakes, use of wedges application of loco brakes shall be taken **as single train where track having gradients.**
2. **For proper examination, path way and lighting arrangements for made at both the sides.**
3. Normally formed at TXR point only with a **COVER BPC**
 - a. **Mentioning originating brake power of individual rakes**
 - b. **Brake pressure in the leading loco and last vehicle**
 - c. **Cover BPC to be handed over to leading loco LP**
 - d. **Original BPCs will remain with respective loco pilots.**

Precautions for forming long haul rakes

If forming at non TXR point

1. Make efforts to depute TXR staff and issue cover BPC
2. If not possible LP and TMRs can be formed
 - a. Cover BPC is dispensed.
 - b. GLP check to be conducted (as per the condition after loading/unloading)
- c. Station staff will be deputed for releasing of the rakes

Precautions for forming long haul rakes

3. Proper locking of CBC shall be ensured by LP
4. **While starting slowly move one vehicle and apply SA9 for 30 Seconds by LP, and then normal running may be commenced.**

Speed of the long haul trains

1. Loaded long haul trains speed is restricted to 55 KMPH

2. Maximum speed of the python rakes is maximum speed of the constituent train which ever is less.

In any one train having more than 50 % wagons with BMBS speed restrictions shall be issued by the respective zone/division (RB Lr 2022/M(N)/60/3 Dt.

17.01.2023

Precautions for forming long haul rakes

- Backing of Train in station yard is avoided; if required supervised by authorized staff.
- Relief of crew shall be arranged at a single stoppage; Crew shall be positioned at proper place for change of crew for avoid un necessary detention.

➤ **If walkie-talkie fails on 'run, long haul movement to be terminated at the next station**

➤ **Not permitted during communication failure**

Precautions for forming long haul rakes

- TMR of leading formation shall travel in his brake van or middle loco cab.
- TMR of trailing train has to travel in his brake van.
- **G & SR rules pertaining to normal train operation will also be applied for long haul trains.**

GR 3.84. Duties of Loco Pilots as to signals when two or more engines are attached to a train:

When two or more engines are attached to a train, the Loco Pilot of the leading engine shall be responsible for the observance of and compliance with the signals and the Loco Pilot or Loco Pilots of other engine or engines shall watch for and take signals from the Loco Pilot of the leading engine

GR 4.33. Examination of single and multiple units by Loco Pilot:

- When coupling single or multiple units or coaches of any such units together, the Loco Pilot shall be responsible for observing that all electrical couplings are properly made.
- After all couplings have been made, the Loco Pilot while taking over the complete train shall satisfy himself that the control and power apparatus and brakes of the complete train are in proper and **prescribed working order**.

CREW TRAINING

1. LP, ALP and TMR will be imparted one day training familiarization in long haul working by a team of supervisors / officers from operation, freight and traction.
2. Long haul fitness training should be made a part of the LP and TMR in refresher curriculum.
3. Station staff will also be counselled and sensitized

Abnormal working

1. Abnormality like, breakage of CBC parts, wagon damages, due to excessive pulling force shall be thoroughly investigated and reported to all concerned,
2. Long haul rakes should be displayed in FOIS and COA with separate identification.
3. Asset failures shall be booked in **miscellaneous account**
4. Punctuality loss booked on **incident account**

Locomotive powering

LOCO	BP CREATION	POWERING	BRAKING	EMERGENCY BRAKING
LEADING LOCO (s)	YES	YES	YES	YES
TRAILING LOCO (s)	NO CUT OF C2 VALVE IN MIDDLE UNIT MANUALLY	NO CUT OF C2 VALVE IN MIDDLE UNIT MANUALLY	NO CUT OF C2 VALVE IN MIDDLE UNIT MANUALLY	YES/NO MAY BE SELECTED ON THE BASIS OF LOAD HAULED.

Condition for formation

- If **both the trains are loaded, leading loco motive** preferably be a **MU or Single WAG9** can be deployed.
- Leading loco will work the train, and trailing loco will be **just piped** and provide additional power when required.
- In other words, trailing loco (s) are not permitted to charge the brake **power**.

Running of long-haul trains

1. Ensure BP in the leading loco $5\text{kg}/\text{cm}^2$ and in trailing BV $4.7\text{kg}/\text{cm}^2$ to confirm by the TMR through walkie-talkie.
2. Both sets of crew to be issued with **caution order**.
3. Provide termination boards;
4. If not provided TMR of trailing BV check the clearance of speed restriction zone and repeat it to the LP of leading loco through walkie-talkie.

UNDER TRAIL BASIS

- Long Haul operation of two empty rakes and BLC rakes (both loaded and empty) with **middle loco de-energized** and only as piped vehicle AND **without deployment of any LP/ALP** in it to save CREW

UNDER TRAIL BASIS

- Where multiple tracks are available, DFC and Zonal Railways may also run long haul **without any intermediate loco but with Right Powering.**

9. Marshalling of goods trains:

9.3. A single 4-wheeler must not be marshaled between 2 bogies but a single 4 -wheeler may be attached between the engine and a bogie vehicle to avoid delays in shunting en-route.

TEST YOUR KNOWLEDGE

QUESTION- 1

•What is the formation of more than one standard train known as ?

- A.Long Haul Train Operation
- B.CC Train Operation
- C.MGR Train Operation
- D.RO-RO Train Operation

Answer: A

QUESTION- 2

• Long haul train will be run in which of the following condition?

1. Both rakes empty
2. One rake empty and one loaded
3. Both rakes loaded
4. All of the given options

Answer: 4

QUESTION- 3

- Which of the following combinations of two constituent trains is not permitted in long haul operation ?
 - A. Two empty rakes
 - B. Two loaded rakes
 - C. Loaded rake in front and empty rake in trailing
 - D. Empty rake in front and loaded rake in trailing

Answer: D

QUESTION- 4

When will the long haul not be operated from the next station during the journey?

- (1) Stop signal defective
- (2) Hand signal not seen
- (3) Walkie talkie defective
- (4) None of these

Answer: 3

QUESTION- 5

•What action should be taken if Walkie-Talkie communication fails during running of long haul train?

- A. Continue the operation without communication
- B. Terminate the long haul movement at next stn
- C. Reduce the speed of the train
- D. Loco is declared fail

Answer: B

Monday, 03 November 2025

SREENIVASULU CHEVURU/Sr.INSTRUCTOR/ZRTI/MLY/SC

QUESTION- 6

During Long Haul working, if there is one rake loaded & other is empty, then?

- (1) Loaded rake will be in front
- (2) Empty rake will be in front
- (3) Any rake can be in front
- (4) None of these

Answer: 1

QUESTION-7

• According to the guidelines issued by the Railway Board for operation of long-haul trains, if 2 trains are combined to form a long-haul train which of the locos will be braking in normal circumstances ?

- A. Only leading loco
- B. Only trailing loco
- C. Both locos
- D. Trailing loco with emergency braking from leading loco if needed

Answer: A

QUESTION- 8

•What is the maximum permitted speed for loaded long haul trains?

- A) 50 KMPH
- B) 60 KMPH
- C) 55 KMPH
- D) 70 KMPH

Answer: C) 55 KMPH

QUESTION- 9

•Which of the following is NOT permitted as part of long-haul train formation?

- A) BTPN wagons
- B) BLC wagons (empty)
- C) BCN wagons (loaded)
- D) Both A and C

Answer: A) BTPN wagons

Explanation: All stock types except BTPN (tankers), BTPGLN, and wagons containing hazardous substances are permitted.

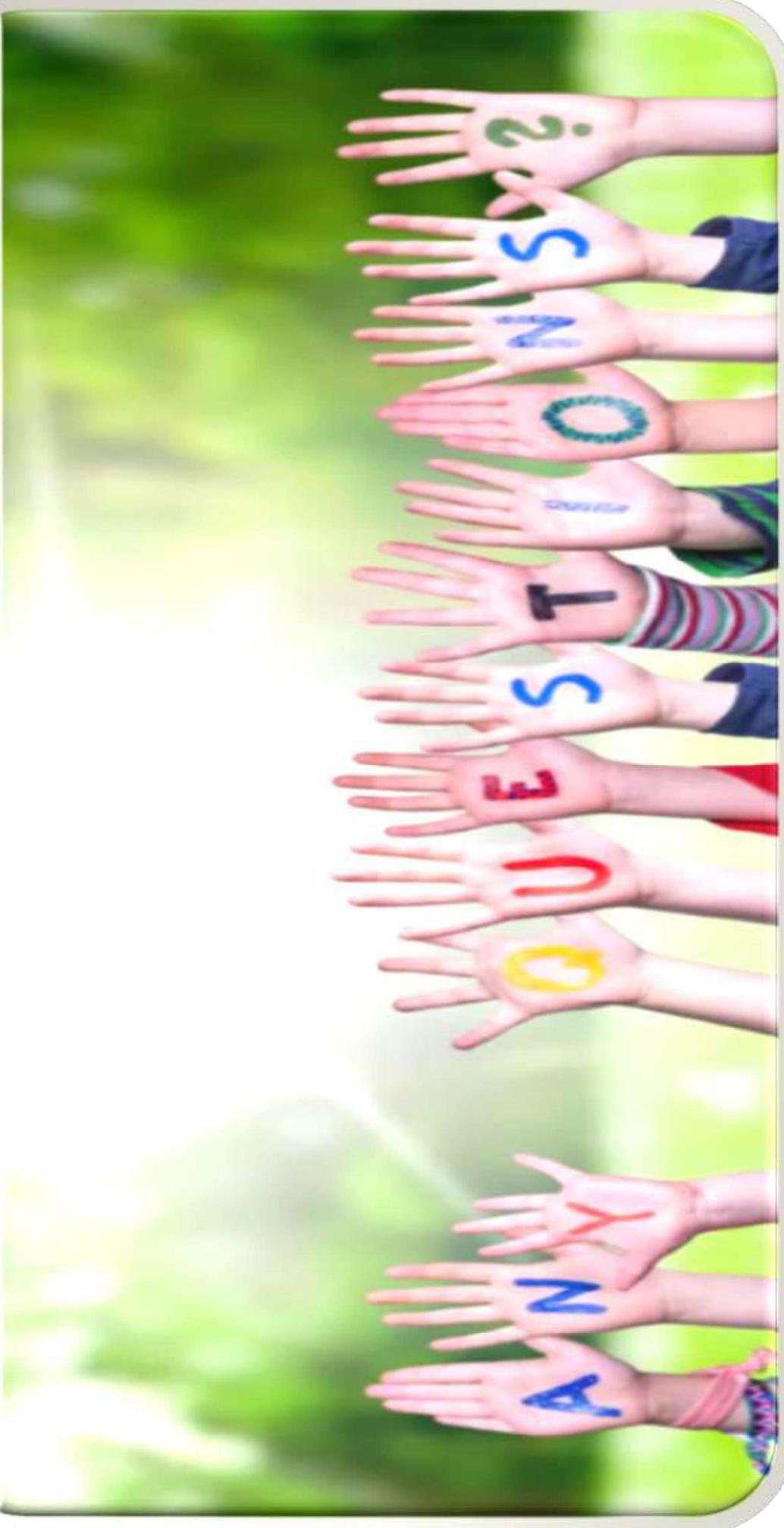
QUESTION- 10

•Which of the following statements is TRUE about DPWCS enabled trains?

- A) All locomotives must be at the front
- B) Locomotives can be located anywhere in the train consist
- C) Only diesel locos are allowed
- D) Only electric locos are allowed

Answer: B

Explanation: With Distributed Power Wireless Control System (DPWCS), synchronized operation allows locomotives to be distributed along the train, not just at the front.





THANK YOU

