Northern Railway

Headquarters Office
Baroda House
New Delhi-110001

NRHQ Operational Circular No. 23

No-230-Elect/TRS/202/Operational circulars Dated: 08.01.2025

Sr. Divnl. Elect. Engineer/RSO,
D.R.M. Office,
LKO, MB, UMB, FZR & NDLS

Sr. Divnl. Elect. Engineer/Traction,
JAT

SUB: Running of loco in rear side of Kumbh spl. trains.

REF: (i) NRHQ Operational Circular no.21 issued vide L.no. even dt.27.09.2024
(ii) RB's L.no. 99/Safety(A&R)/19/10 dt. 10.12.2001
(iii) RB's L.no. 2000/M(L)/466/803 dt.09.03.2004
(iv) RDSO's Instruction Bulletin no. MP.IB.BK- 01.05.05 (Rev.0.02) May, 2006

It has been planned to operate short distance special trains with locos on both ends during Mahakumbh to avoid reversal of locos. ECRs are also being dispatched from different divisions to Prayag area for Kumbh spl. with loco in both ends. In order to ensure safe and smooth operation of the trains, following instructions should be followed.

1. HQs office has already issued operational instructions vide above referred letter (i) with regard to attachment of dead loco. These instructions should be complied with.
2. Loco attached in rear should be kept in de-energized condition.
3. Crew of leading loco will conduct continuity test every time during rake reversal.
4. Crew of leading loco will conduct brake feel & brake power test after rake reversal as per existing instructions.
5. Headlight and all other lights of rear loco which are not required to be switched on during movement should be put off to ensure saving of the battery. If required, battery of the loco arrived as dead may be charged by energizing the loco during lie over period at destination station.

6. Rear side red marker lights of rear loco may be put 'ON' after sun set. (Red marker lights will not be the substitute of the tail lamp, required to be provided by TM on last vehicle of the train).

7. Rear loco shall be escorted by competent railway employee, who shall not be less than rank of ALP, who shall keep a walkie-talkie set for communication with the TM & LP of the leading loco. He shall be responsible to ensure safe running of the loco, application & release of loco brakes according to application & releasing done by LP of leading loco & to take necessary action in case of any discrepancy. He shall also apply brakes in train by putting A-9 on emergency in case of any emergency/accident. He shall also keep an eye on battery voltage of the loco & take necessary action if getting down for the purpose to avoid failure of the loco during rake reversal.

8. If brake application in rear loco is not functional after dropping of BP pressure from leading loco or it is functional but not releasing after re-creation of the BP pressure or taking excess time to release, it shall be got attended & rectified by the maintenance staff. Loco may be dispatched in energized condition with provision of LP/Crew on it for a particular trip, if it could not be attended & got rectified.

9. All other instructions mentioned in above referred letters with regard to movement of dead loco shall be followed strictly.

D/A – As above

Digitally Signed by Naveen Kumar Agarwal
Date: [illegible]
Reason: Approved

(Naveen Kumar Agarwal)
CEE/Operations

Copy: Secy. to PCEE for kind information of PCEE

mch

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2000/M(L)/466/803 New Delhi, dated 1st March, 2004
9th

General Managers,
All Indian Railways.

Sub: Attaching/Escorting of dead locomotives.

Ref: (i) Safety Directorate's letter No. 99/Safety (A&R)/19/10 dt. 10.12.2001 & message dt. 17.12.2002.

(ii) RDSO's letter No. SD.DFM.A.4.7. dt. 17.10.2000 & 28/30.11.2001.

In ***partial*** modification of instructions issued vide letters under reference, following decisions have been taken:

1. Attaching of dead locomotive with M/E/Superfast trains:

In addition to freight/passenger trains, a dead locomotive can also be attached to Mai/Express trains ***including*** Superfast trains but ***excluding*** Rajdhani and Shatabadi if the locomotive brakes including proportionate brakes are operational and maximum permissible speed of the locomotive is not less than the booked speed of the train in which it is being attached. Locos with inoperative brakes can be attached subject to the brake power of the train being within the permissible limits.

Locomotive with defects in undergear equipment can be attached only in freight trains.

2. Escorting of dead locomotives:

Escorting of locomotives (diesel as well as electric) attached to freight and passenger carrying trains is not necessary if the brakes including proportionate are fully operational and the dead locomotive is attached next to the train engine. The dead locomotive will continue to be escorted if attached in the rear of brake van or has defect in undergear equipment.

3. ***Safety precautions circulated vide RDSO's letter under reference, shall continue to be ensured.***

4. The letter issues in consultation with Safety, Traffic & Electrical Directorate of Railway Board.

(Shakeel Ahmed)
Exec. Dir. Mech. Engr.(Traction)
Railway Board.

Copy to: Adviser(Safety), EDEE(RS) & EDTT(M)/Railway Board.

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GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

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No.99/Safety(A&R)/19/10 New Delhi, 10.12.2001

General Managers/Safety,
All Zonal Railways and
OSD/New Zones,
K.R.C.

Sub: Attachment of Dead locomotives

The following conditions shall be satisfied before attachment of dead locomotive to any train /light engine.

(A) Conditions for attachment of dead locomotive:-

(i) Certificate for 'Fit to run" is issued by Section Engineer/Loco Inspector/ Power Controller for Passenger/Goods train.

(ii) The dead locomotive is escorted by a competent person not lower than Asstt. Driver.

(iii) Maximum permissible speed of the train shall not be less than maximum permissible speed of the dead locomotive.

(iv) Arrangements have been made to ensure that brakes can be applied on dead locomotives in synchronization with working locomotives.

(v) Running of double/triple headed is permissible on the section over which the dead locomotive is to be hauled.

(vi) When a dead electric locomotive has to be moved on a non-electrified section, special check shall be made regarding its infringement to the schedule of maximum

moving dimensions. In the case of any infringement, the dead locomotive shall be treated as an ODC.

(vii) As a final check, the coupled locos should be run for about 500 meters and the driver shall check for any abnormal rise in the temperature of the wheels of the dead locomotive and shall also check it at subsequent stops during the journey.

In addition to the above the, the following precautions should be taken for hauling the dead locomotives:

(B) Attaching/hauling of dead locomotives by Passenger Trains:

(i) Only one dead locomotive (diesel/electric) can be attached.

(ii) Brake power of the train should be 100% excluding dead locomotive.

(iii) The dead locomotive can be attached next to train engine only.

(iv) As far as possible, brake should work on dead locomotive. However, if it is not possible, then in the case of air-braked train, brake pipe and feed pipe of working locomotive shall be connected to brake pipe and feed pipe of trailing stock and dead locomotive will work as piped vehicle.

In the case of vacuum braked train, vacuum pipe of locomotive shall be connected with vacuum train pipe of trailing stock and the dead locomotive shall be treated as a piped vehicle. If the locomotive is fitted with pure air braked system and vacuum pipe is not provided on locomotive then it should be attached with air braked trains only.

(C) Attaching /Hauling of dead locomotives by goods trains:

(i) Movement of maximum three locomotives (2 working + 1 dead) with load is permissible subject to observations of all restrictions on operation of double/triple headed working

locomotives in the section provided that brakes in dead locomotives are operational.

The above instructions should be strictly followed and it is, therefore, advised that these guidelines be supplemented in the respective Subsidiary Rules also.

Hauling of dead locomotives should be ensured as per the above instructions in addition to other technical precautions/instructions issued on the subject.

(Indra Ghosh)
Executive Director/Safety
Railway Board

2188191/2025/O/o Dy.CME/O&F/HQ/NR

भारत सरकार GOVERNMENT OF INDIA
रेल मंत्रालय MINISTRY OF RAILWAYS
(रेलवे बोर्ड RAILWAY BOARD)

No. 2000/M(L)/466/803/Pt. New Delhi, dt. 28.06.2006

General Managers, जनरल मैनेजर
All Indian Railway, सभी भारतीय रेलवे
MD/Konkan Railway, Navi Mumbai. एम डी/कोंकण रेलवे/नवी मुंबई,

Sub: Movement of dead locomotives.

The revised instructions to haul dead diesel and electric locomotives, as recommended by RDSO vide their instructions Bulletin no.MP.IB.BK-01.05.05 (Rev.0.02), May, 2006 is enclosed for implementation. Receipt of this letter may please be acknowledged.

DA: As above.

21/6/2006

(J.K. Jain)
Dir. Mech. Engg. (Tr.)
Railway Board

Copy to: AM/S&E, AM/TT, Adv./Safety, ED/Chg., EDEE(RS), EDTT(M) & EDCE (B&S)
DG, RDSO, with reference to RDSO's letter No. SD.DFM.A.4.7 dt. 29.05.06.

प्रतिलिपि: उपरोक्त

भारत सरकार
रेल मंत्रालय

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

Recommended Instructions to haul Dead Diesel & Electric Locomotives

Instruction Bulletin No.MP.IB.BK-01.05.05

(Rev.0.02)
May, 2006

अनुसंधान अभिकल्प एवं मानक संगठन
लखनऊ - 226 011

RESEARCH DESIGNS & STANDARDS ORGANISATION
LUCKNOW - 226 011

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RECOMMENDED INSTRUCTIONS TO HAUL DEAD DIESEL &ELECTRIC LOCOMOTIVES

1. INTRODUCTION

Instructions for hauling dead diesel and electric locomotives have been issued earlier by Railway Board and RDSO. These instructions were given in the form of various letters and reports from time to time. However no consolidated instructions are available at present.

It is understood that different procedures are being adopted on Zonal Railways to haul dead locomotives. The existing instructions also do not fully cover the special features of the newly introduced diesel and electric locomotives. To address this problem and to develop uniform instructions to be followed on Indian Railways, various instructions issued by Railway Board and RDSO have been compiled and updated in this report.

The instructions are divided into two sections. In the first section, General Instructions are given, based on Railway Board's letter No. 77-M(L)/649/4 dated 27.4.77. Changes have been made as necessary to incorporate subsequent instructions and to fulfill requirements of change in traction from steam to diesel/electric

This Instruction Bulletin was first issued in this form in Oct., 2005 vide this office letter no. SD.DFM.A.4.7 dt 26/27.10.05. This revised version includes amendments made vide this office letter no.SD.DFM.A.4.7 dt 25.01.06. In addition, para 2.5 and 2.6 of Section-1 have been thoroughly revised for better understanding.

In the second section, instructions concerning the brake system are included so that the brakes on dead locomotives can be applied and released along with leading locomotive. These instructions are given for various combinations / types of locomotives.

SECTION –1

2. GENERAL INSTRUCTIONS

2.1 **Definition:** A locomotive which is not worked on its own power is defined as a dead locomotive.

2.2 **Need for haulage of dead locomotive:**

A locomotive may be required to be worked dead –

i) To clear a block section and take the locomotive to its destination in case of failure or break down on the road;
ii) For sending the locomotive to workshop/running shed for repairs and/or maintenance schedules.
iii) To balance the loco from one division to another.

2.3 **Basic requirements to be satisfied when hauling dead locomotive:**

The conditions specified herein shall be complied with before haulage of a dead locomotive on any train.

2.3.1 As a result of attachment of dead locomotive(s), maximum permissible length and maximum permissible load of the train should not be exceeded.

2.3.2 In case the maximum permissible speed of the dead locomotive(s) is less than the maximum permissible speed of the train, suitable speed restriction shall be imposed on the train while attaching the dead locomotive(s).

2.3.3 As far as possible, brakes should apply on dead locomotive in synchronisation with working locomotive. Instructions to be followed while connecting dead locomotive to achieve above condition are given in Section-2 for various combinations/type of locomotives. In other cases, dead locomotive will be hauled as piped vehicle.

2.3.4 On a dead locomotive, all the circuit breakers and battery knife switch shall be off and such other steps taken to ensure that the dead locomotive cannot be started inadvertently.

2.3.5 On diesel/electric locomotives it should be ensured that reversor handle is placed in neutral position and removed.

For long distance movement of dead diesel-electric/electric locomotives, the traction motor brushes shall be lifted and properly secured.

2.3.6 The locomotive brakes shall be fully released. The brake pipe and main reservoir pressure shall be fully discharged or the vacuum fully destroyed. The MU2B valve shall be placed in trail/dead position.

2.3.7 The train driver shall be informed that he should work the train carefully as the dead locomotive is attached.

2.4 **Clearance of block section:**

2.4.1 When a locomotive working a train fails on the road, the dead locomotive shall be attached coupled to the relieving locomotive and the train worked to the next block station, where the dead locomotive shall normally be detached.

2.4.2 In case the dead locomotive is not detached from the train, as above, then the train will work as double/triple headed with the dead locomotive upto the destination or the nearest locomotive shed or as per instructions of control.

2.5 **Hauling of dead locomotive by goods train**

2.5.1 Dead loco brakes are functional, it is attached next to working locomotive(s) and MR & BC equalizing pipes are connected:

2.5.1.1 In case dead loco brakes are functional, it should be marshalled next to working locomotive(s), duly observing the conditions laid down in section – 2 (including connection of MR equalizing pipe and BC equalizing pipe of rear most working locomotive and dead locomotive(s)), so that brake power of the dead locomotive(s) can be utilized. Following combinations of working and dead locomotives are permitted.

Type of section	No. of working locos	No. of dead locos	Remarks
On all sections	1	1	-
On sections where double heading is permitted	2	1	See para 2.5.1.2 & 2.5.1.4
	2	2	See para 2.5.1.2, 2.5.1.3 & 2.5.1.4
On sections where triple heading is permitted	3	1	See para 2.5.1.2, 2.5.1.3& 2.5.1.4

2.5.1.2 In case dead locomotive brakes are functional and double/triple heading is permitted, the dead locomotive can be attached next to working locomotives.

2.5.1.3 Maximum four locomotives (i.e. 2 working and 2 dead or 3 working and 1 dead) can be attached provided overall train length does not exceed the loop length from starter to fouling mark.

2.5.1.4 In all the above cases, restrictions on existing bridge spans of non-standard designs, sub-structures (pier, abutment and foundation) and bridges on curves have to be decided by the Railways.

2.5.2 Dead locomotive brakes are functional but it is not attached next to working locomotive(s) or MR and BC equalizing pipes are not connected:

In case the brakes of the dead locomotive are functional but it is not possible to attach it next to working locomotive(s) or it is not possible to connect MR

and BC equalizing pipes of rear most working locomotive and dead locomotives, the dead locomotive shall be treated as a piped vehicle and instructions in para 2.5.3 shall be applicable.

2.5.3 Dead locomotive brakes are not functional and it is hauled as a piped vehicle :

In case brakes are not functional on dead locomotive, it can be hauled as a piped vehicle. The conditions to be satisfied in these cases are given below:

i) Only one dead locomotive is permitted to be hauled.

ii) Preferably the dead locomotive should be attached with the train locomotive. In case it is not possible to attach dead locomotive to working locomotive, it shall be marshalled as follows:

a) If the dead locomotive is not placed next to the train locomotive, it may be marshalled anywhere on the goods train provided that the minimum distance between the dead loco and the train loco/banking loco (if any) shall be equal to the largest span of the bridge in the section where the dead locomotive is to be hauled. In this case, the following safety requirements from the point of view of brakes should be followed:

- Dual brake loco on vacuum train:

  Vacuum train pipe of loco shall be connected with the vacuum train pipe of trailing stock and at least twenty fully vacuum braked 4-wheeler units shall be attached behind the dead locomotive.

- Dual brake loco/air brake loco on air braked train:

  Brake pipe of dead locomotive shall be attached to brake pipe of the train and at least ten fully braked wagons shall be attached behind the dead locomotive.

b) In case dead locomotive is attached in rear of brake van, the instructions given in para 2.5.4 will be applicable.

2.5.4 When dead locomotive cannot work as a piped vehicle:

In case, it is not possible to work dead locomotive as a piped vehicle (for example pure air brake locomotive attached to a vacuum train, breakage of Brake Pipe/its angle cock or any other reason) the locomotive has to be attached at the rear of brake van and following conditions are to be satisfied:

i) Only one dead locomotive is permitted to be hauled.

ii) Such type of dead loco movement is permitted on gradients not steeper than 1 in 100.

iii) Dead locomotive will be accompanied by a competent person not less than Asstt. Driver. This competent person should be provided with suitable equipment including walkie-talkie set, flags, detonators, etc. The Guard of the train to which the dead locomotive has been attached shall personally ensure that the dead locomotive is accompanied by such a competent person. It will be the duty and the responsibility of the competent person to switch on the flasher light and apply the handbrakes judiciously in case of run away occurring.

2.5.5 In case of dead diesel/electric locomotive fitted with the side coupling rods, it shall be ensured that all coupling rods are in position.

2.5.6 The basic requirements as enumerated in para 2.3 are satisfied.

2.6 **Haulage of dead locomotive by mail/express/passenger /mixed train**

A dead diesel/electric (passenger or mixed) locomotive may be attached to a mail/express/passenger/mixed train (except Rajdhani or Shatabdi Express) hauled by diesel/electric locomotive duly observing the conditions laid down in Section-2, provided the following conditions are satisfied: -

2.6.1 Dead loco brakes are functional and it is attached next to working locomotive(s) and MR and BC equalizing pipes are connected:

2.6.1.1 Only one dead diesel/electric locomotive is attached to train.

2.6.1.2 Dead locomotive may be attached at originating station or en-route provided that the brake of mail/express/passenger train/ mixed train (excluding dead locomotive) is at least 90% when dead locomotive is attached.

2.6.1.3 Running of double/triple headed diesel/electric locomotive is permitted on the section.

2.6.2 Dead locomotive brakes are not functional and it is hauled as a piped vehicle: ✓

2.6.2.1 Conditions given in para 2.6.1 are applicable.

2.6.2.2 In case dead locomotive is attached in rear of brake van/SLR, the instructions given in para 2.6.3 will be applicable.

2.6.3 When dead locomotive cannot work as a piped vehicle:

In case, it is not possible to work dead locomotive as a piped vehicle (for example pure air brake locomotive attached to a vacuum train, breakage of Brake Pipe/its angle cock or any other) the locomotive has to be attached at the rear of brake van / SLR and following conditions are to be satisfied:

i) Only one dead locomotive is permitted to be hauled.

ii) Such type of dead loco movement is permitted on gradients not steeper than 1 in 100.

iii) Dead locomotive will be accompanied by a competent person not less than Asstt. Driver. This competent person should be provided with suitable equipment including walkie-talkie set, flags, detonators, etc. The Guard of the train to which the dead locomotive has been attached shall personally ensure that the dead locomotive is accompanied by such a competent person. It will be the duty and the responsibility of the competent person to switch on the flasher light and apply the handbrakes judiciously in case of run away occurring.

2.6.4 A certificate shall be issued by the Section Engineer / Loco Inspector / Power Controller / Driver of the failed loco that the dead locomotive is fit to run by passenger train in all respects from the safety point of view at the maximum permissible speed of the train.

2.6.5 The basic requirements as enumerated in para 2.3 are satisfied.

2.7 Haulage of dead electric locomotive on non-electrified section

When a dead electric loco is moved on a non-electrified section, special check shall be made regarding its infringement to the schedule of maximum moving dimensions. If there is any infringement to the schedule, the dead electric loco shall be considered as an ODC (Over Dimensional Consignment) and its movement shall be permitted in accordance with the extant rules governing such movements.

SECTION – 2

3. INSTRUCTIONS CONCERNING BRAKE SYSTEM FOR HAULING DEAD LOCOMOTIVE

These instructions give details of procedure to couple dead locomotive with light locomotive or with train so that brakes are applied on dead locomotive of different types.

3.1 Hauling dead diesel/electric locomotive fitted with Pure Air /Dual brake system

(For diesel locomotives - Ref. RDSO report No. MP-.572/82 February 1982
(For electric locomotives - Ref. Misc. Report No.MP-Misc.45 July 1996))

A dead locomotive fitted with pure air brake/dual air brake system can be hauled both by pure air brake and dual air brake working locomotive. For hauling dead locomotive pneumatic connections between locomotive are to be made similar to MU operation so that brakes are applied on dead locomotive. Details of procedure of coupling dead locomotive are given below:

3.1.1 Drop down pantograph of dead loco (applies to Electric Loco only) and engage coupler.

3.1.2 Couple brake pipe, feed pipe, MR & BC equalising pipe and vacuum hose (for dual brake loco) between the coupled ends of locomotives.

3.1.3 When hauled by a light locomotive, on free ends of the coupled locomotives angle cocks of brake pipe, feed pipe and cutout cocks of MR and BC equalising pipe should be closed and vacuum hose should be kept on dummy.

3.1.4 If dead locomotive is attached behind the train locomotive of an air braked train, rear end / end coupled with train brake pipe and feed pipe of the dead locomotive should be connected to brake pipe and feed pipe of the train respectively (on single pipe train only brake pipe will be connected and angle cock of feed pipe shall be closed). On free end of working locomotive angle cocks of brake pipe, feed pipe and cutout cocks of MR and BC equalising pipe should be closed. For dual brake locomotive vacuum hoses shall be kept on dummy.

3.1.5 If dead locomotive is attached to a vacuum train , vacuum hose pipe of dead locomotive will be connected to vacuum hose pipe of the train and on free end of the working locomotive vacuum hose should be kept on dummy. On free end of working locomotive angle cocks of brake pipe, feed pipe and cutout cocks of MR and BC equalising pipe should be closed . On the rear end / end coupled with train angle cocks of brake pipe, feed pipe and cutout cocks of MR and BC equalising pipe of dead locomotive shall be closed.

3.1.6 Open BP & FP angle cocks and MR & BC equalising pipe cut out cocks between the coupled ends.

3.1.7 Open cutout cock of leading locomotive provided in port No.5 of A-9 auto brake valve of operative control stand .

3.1.8 Make emergency brake application through A-9 automatic brake valve, close cut out cock on in-operative control stand of working loco. Also close the cutout cocks provided in Port No.5 of A-9 valve on both control stand/cabs of dead locomotive.

3.1.9 Keep MU-2B valve in 'Lead' position on leading locomotive and in 'Trail'/ 'Dead' position on dead locomotive.

3.1.10 Open 1" brake pipe charging cut out cock on leading locomotive and close the same on trailing dead locomotive.

3.1.11 Remove the driver's auto. & independent brake valve handles from inoperative control stands on leading and trailing dead locomotives.

3.1.12 2" Cutout cock (for dual/vacuum brake loco) of dead locomotive should be closed.

3.1.13 Close isolating cock provided before H-5 & HB-5 relay air valve of dead locomotive. (in new built diesel locomotives these valves are replaced with RT-116 and RT-5 pressure switch).

3.1.14 In case of electric locomotive close emergency application isolating cock of dead locomotive.

3.1.15 Charge the brake system and apply & release the brakes. Brakes should apply and release brakes simultaneously on both the locomotives.

3.1.16 In case it is not possible to connect MR equalising and BC equalising pipes between dead and working locomotive similar to MU operation then dead locomotive shall be hauled as piped vehicle and pneumatic connections are to be done as under:-

.1 On air braked train brake pipe and feed pipe of dead locomotive should be coupled with brake pipe and feed pipe of the train (on single pipe train only brake pipe shall be connected) and on coupled ends angle cock shall be kept open On free end of the working locomotive angle cocks should be closed.

.2 In case the trailing stock is vacuum braked, only vacuum hose should be coupled between locomotives and between dead locomotive and train.

3.2 **Hauling dead WAP5/WAG9 electric locomotive fitted with E-70 brake pipe control system and hauling dead locomotive fitted with IRAB-1/28 LAV-1 brake system by WAP5/WAG9 locomotive**

These locomotives are fitted with electro pneumatic E-70 brake system. These locomotives in dead condition can be hauled both by locomotive fitted with IRAB-1 / 28LAV-1 brake system and locomotive fitted with E-70 brake system. Direct (Independent) brake application will not take place on WAP5 / WAG9 locomotive hauled in dead condition.

The WAP5 / WAG9 locomotive can also haul dead locomotive fitted with IRAB-1 / 28 LAV-1 brake system. The direct brakes will operate on locomotives fitted with IRAB-1 / 28 LAV-1 brake system hauled in dead condition by a WAP5 / WAG9 locomotive.

3.2.1 Hauling dead WAP5/WAG9 electric locomotive fitted with E-70 brake pipe control system in a train

3.2.1.1 Switch off BLDJ and lower the pantograph of the loco to be sent as dead. Isolate the pantograph through panel isolating cock on pneumatic panel.

3.2.1.2 Switch off the CEL first by bringing BL switch to 'C' and then to 'OFF'. .Switch off the "circuit breaker control circuit locomotive" (112.1) in SB2 panel.

3.2.1.3 Couple the dead loco in the train.

3.2.1.4 Put auto brake controller (A-9) in 'Neutral' position in both cabs of the dead locomotive.

3.2.1.5 Put the direct brake controller (SA-9) in 'Release' position in both cabs of the dead locomotive.

3.2.1.6 Drain the main reservoirs and auxiliary reservoir of the dead locomotive completely. After draining out, close the drain cocks of main reservoirs and auxiliary reservoir.

3.2.1.7 If loco brake in the dead locomotive have not got released, which can be verified by observing the BC pressure gauge, then release the same in the following steps:

i) Manual handle of distributor valve at pneumatic panel should be operated manually to release control BC pressure. BC pressure shall automatically vent through D2 relay valve to release loco brakes.

ii) In case residual BC pressure remains in brake cylinder line, the BC pressure should be released through bogie isolating cock of both

bogies. Make bogie isolating cocks in 'Normal' position after releasing the BC pressure.

3.2.1.8 In the dead locomotive, ensure isolating cock positions in the pneumatic panel as follows: (TOWED DEAD)

Isolating cock	47 (DEAD ENGINE)	74 (EMERGENCY /VIGILANCE)	136 (BRAKE FEED PIPE)	70 (E-70 BRAKE PIPE)
Positron	OPEN	CLOSED	CLOSED	CLOSED

3.2.1.9 Connect BP pipe of the dead loco to the BP pipe of the working loco and open BP angle cock of both the locomotives. The auxiliary reservoir on dead locomotive will get charged from the BP supply of the working locomotive. Check the BP pressure gauge in the cab of dead locomotive. It should show the same pressure as that of the live locomotive (In case locos are to be attached on a train having twin pipe i.e both BP and FP then FP of both the locos should also be connected and its angle cock should be opened).

3.2.1.10 Release the parking brake by manually pressing the release push button of the latched solenoid on the pneumatic panel of the dead locomotive and lock it in position.

3.2.1.11 Check the condition of the parking brake gauge of the dead loco in the driver's cab – this should indicate 5.0 kg/cm^2.

3.2.1.12 Double check the release of parking brakes of dead loco by moving the parking brake unit by hand and observing the clearance between the brake blocks/pads and the wheels wheel discs.

3.2.1.13 Apply auto brake (A-9) in the working locomotive and check that loco brakes on both the locomotives are getting applied. Then release the auto brake in the working loco and check that loco brakes are getting released on both the locomotives. Rear locomotive (WAG9/WAP5 dead) takes about 1 minute to release.

3.2.1.14 As a final check, run the coupled locos for about 500 m and feel for any abnormal rise in temperature of the wheels of the dead loco and also check it at subsequent stops during journey.

3.2.1.15 Remember that in the dead locomotive, the loco brakes take about 1 minute to release after auto brake application from the live locomotive. Hence after every auto brake application and release, wait for adequate time (minimum 1 minute) for release of loco brakes in dead locomotive before resuming traction.

3.2.1.16 Escorts accompanying dead locomotive should never put BL key in position 'D' and also strictly avoid to energise the dead locomotive.

3.2.1.17 After reaching the destination, before detaching the working loco, apply parking brake on dead locomotive by manually pressing the 'APPLY' push button of the latched solenoid valve (30) on the pneumatic panel of the dead locomotive (it will be necessary to unlock the release push button first).

3.2.2 Hauling dead WAP5/WAG9 electric locomotive fitted with E-70 brake pipe control system when attached next to leading working locomotive

3.2.2.1 Switch off BLDJ and lower the pantograph of the loco to be sent as dead. Isolate the pantograph through panel isolating cock on pneumatic panel.

3.2.2.2 Switch off the CFL first by bringing BL switch to 'C' and then to 'OFF'. Switch off the "circuit breaker control circuit locomotive" (112.1) in SB2 panel.

3.2.2.3 Couple the dead loco in rear of the working loco.

3.2.2.4 Put auto brake controller (A-9) in 'Neutral' position in both cabs of the dead locomotive.

3.2.2.5 Put the direct brake controller (SA-9) in 'Release' position in both cabs of the dead locomotive.

3.2.2.6 Drain the main reservoirs and auxiliary reservoir of the dead locomotive completely. After draining out, close the drain cocks of main reservoirs and auxiliary reservoir.

3.2.2.7 If loco brake in the dead locomotive have not got released, which can be verified by observing the BC pressure gauge, then release the same in the following steps:

i) Manual handle of distributor valve at pneumatic panel should be operated manually to release control BC pressure. BC pressure shall automatically vent through D2 relay valve to release loco brakes.

ii) In case residual BC pressure remains in brake cylinder line, the BC pressure should be released through bogie isolating cock of both bogies. Make bogie isolating cocks in 'Normal' position after releasing the BC pressure.

3.2.2.8 In the dead locomotive, ensure isolating cock positions in the pneumatic panel as follows: (TOWED DEAD)

Isolating cock	47 (DEAD ENGINE)	74 (EMERGENCY /VIGILANCE)	136 (BRAKE FEED PIPE)	70 (E-70 BRAKE PIPE)
Position	CLOSED	CLOSED	CLOSED	CLOSED

3.2.2.9 Connect BP and MREP pipes of the dead loco to the BP and MREP pipes of the working loco and open BP and MREP angle cocks of both the

locomotives. The auxiliary reservoir on dead locomotive will get charged from MREP supply of the working locomotive. Check the BP and MR pressure gauges in the cab of dead locomotive. It should show the same pressure as that of the live locomotive (In case locos are to be attached on a train having twin pipe i.e both BP and FP then FP of both the locos should also be connected and its angle cock should be opened).

3.2.2.10 Release the parking brake by manually pressing the release push button of the latched solenoid on the pneumatic panel of the dead locomotive and lock it in position.

3.2.2.11 Check the condition of the parking brake gauge of the dead loco in the driver's cab – this should indicate MR pressure

3.2.2.12 Double check the release of parking brakes of dead loco by moving the parking brake unit by hand and observing the clearance between the brake blocks/pads and the wheels wheel discs.

3.2.2.13 Apply auto brake (A-9) in the working locomotive and check that loco brakes on both the locomotives are getting applied. Then release the auto brake in the working loco and check that loco brakes are getting released on both the locomotives. Rear locomotive (WAG9/WAP5 dead) takes about 30 seconds to release.

3.2.2.14 As a final check, run the coupled locos for about 500 m and feel for any abnormal rise in temperature of the wheels of the dead loco and also check that subsequent stops during journey.

3.2.2.15 Remember that in the dead locomotive, the loco brakes take about 30 seconds to release after auto brake application from the live locomotive. Hence after every auto brake application and release, wait for adequate time (minimum 1 minute) for release of loco brakes in dead locomotive before resuming traction.

3.2.2.16 Escorts accompanying dead locomotive should never put BL key in position 'D' and also strictly avoid to energise the dead locomotive.

3.2.2.17 After reaching the destination, before detaching the working loco, apply parking brake on dead locomotive by manually pressing the 'APPLY' push button of the latched solenoid valve (30) on the pneumatic panel of the dead locomotive (it will be necessary to unlock the release push button first).

3.2.3 Hauling dead locomotive fitted with IRAB-1/28 LAV-1 brake system by WAP5/WAG9 locomotive

3.2.3.1 Set up the IRAB-1 / 28 LAV-1 locomotives for hauling dead in normal condition.

3.2.3.2 Connect BP, MREP and Direct Brake Pipe (DBP) / Brake Cylinder Equalising Pipe (BCEP) dead loco to the BP, MREP and direct brake pipe of the working loco and open BP, MREP and DBP angle cocks of both the locomotives. The auxiliary reservoir on dead locomotive will get charged from the MREP supply of the working locomotive. Check the BP and MR pressure gauge in the cab of dead locomotive. It should show the same pressure as that of the live locomotive (in case locos are to be attached with a train having twin pipe i.e both BP and FP then FP of both the locos should also be connected and its angle cock should be opened).

3.2.3.3 Double check the release of parking brakes /hand brakes of dead loco by moving the parking brake /hand brakes unit by hand and observing the clearance between the brake blocks/pads and the wheels wheel discs.

3.2.3.4 Apply auto brake (A-9) in the working locomotive and check that loco brakes on both the locomotives are getting applied. Then release the direct brake in the working loco and check that loco brakes are getting released on both the locomotives.

3.2.3.5 Apply direct brake (SA-9) in the working locomotive and check that loco brakes on both the locomotives are getting applied. Then release the direct brake in the working loco and check that loco brakes are getting released on both the locomotives.

3.2.3.6 As a final check, run the coupled locos for about 500 m and feel for any abnormal rise in temperature of the wheels of the dead loco and also check it at subsequent stops during journey.

3.2.3.7 After reaching the destination, before detaching the working loco, apply parking brake / hand brake on dead locomotive.

3.3 **Hauling dead WDG4 diesel locomotives fitted with computerised control brake system (CCB)**

These locomotives are fitted with computer controlled brake (CCB) system. These locomotives in dead condition can be hauled both by locomotive fitted with IRAB-1 / 28LAV-1 brake system and locomotive fitted with CCB brake system. To haul this locomotive in dead condition, following procedure should be followed:

3.3.1 If the locomotive is to be towed with all MU pipes connected to working loco, set up the brake system as under:-

.1 Engage coupler.

.2 Ensure that Dead Engine Cutout Cock is closed.

.3 Couple BP, FP, BC & MR equalising pipes between coupled ends of locomotives.

.4 Open BP, FP angle cock and MR & BC equalising pipe cutout cock between coupled end of locomotives. Unused pipes' angle cocks/cutout cocks should be closed.

.5 Open the MREP end cocks.

.6 Keep Lead/trail switch off leading loco in 'Lead' position and of trailing dead locomotive in 'Trail/Dead' position.

.7 Keep automatic and direct brake valves of leading & trailing dead locomotive in 'Release' position.

.8 Follow the instructions given in para 3.3.3

.9 Apply and release automatic and direct brakes from leading loco and ensure that application and release are taking place simultaneously on both the locomotives.

3.3.2 If the dead WDG4 locomotive is to move inside the train consist, MR and BC equalising MU pipes not connected, set up the brake system in the dead loco as follows:

.1 Engage coupler.

.2 Couple brake pipe between coupled ends of locomotive.

.3 Open brake pipe cutout cock between coupled ends of locomotives and the same at free end should be kept closed or connected with the train brake pipe.

.4 Open Dead Engine Cutout Cock.

.5 Open MREP & BCEP end cocks.

.6 Micro air brake circuit breaker in No.1 electrical control must be kept in 'OFF' position.

.7 Keep automatic and direct brake valves of leading & trailing dead locomotive in 'Release' position.

.8 Close emergency brake valve at both consoles.

.9 Isolate all safety control devices.

.10 Open main reservoir drain valves to drain main reservoir to approximately 1.4 kg/cm^2 (20 psi) or less.

.11 Close MR drain valves.

.12 Connect locomotive brake pipe to train brake pipe (if moving with train) and charge brake system. MR2 charges to a maximum of 1.8 kg/cm^2 (25 psi).

.13 From the controlling locomotive make a 1.4 kg/cm^2 (20 psi) brake pipe reduction, then check for brake cylinder application on dead locomotive.

.14 Follow the instructions given in para 3.3.3.

3.3.3 Below are the points to be followed in both the above cases:

.1 Battery switch off dead loco must be closed and both control and computer control breakers must be ON (levers up) to provide locked wheel protection for locomotive.

.2 TCC1 and TCC2 (Traction Control Converter) computer breakers must also be ON (Up) to detect an unpowered locked wheel and alert the operator.

.3 All other circuit breakers be in OFF position (levers Dn).

.4 Set all control switches in OFF position.

.5 Remove starting fuse.

.6 Set the throttle/dynamic brake handle in IDLE. Remove reverser (directional handle) from both controllers to lock the controls.

.7 Install MU jumper cables on dead unit.

.8 Ensure that hand brakes of leading and trailing locomotives are working and are released.

.9 Ensue that bogie BC cut out cocks are open.

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Northern Railway

Headquarters Office,
Baroda House,
New Delhi- 110001.

NRHQ Operational Circular no. 21
No.230-Elect/TRS/202/Operational Circular

Dated: 27.09.2024

Sr. Divnl. Elect. Engineer/ RSO/OP,
Northern Railway,
D.R.M. Office,
FZR, UMB, DLI, MB & LKO,

Sub: Necessary instructions regarding making the loco dead and its operation.
Ref: RB's Letter no. 2007/Elect (TRS)/440/14 Pt. dated 06.02.2018

In order to ensure safe and smooth movement of dead electric locomotives, the following instructions based on RDSO bulletin no.MP.IB.BK-01.05.05(Rev.0.02), May, 2006, referred vide RB's letter above are issued for compliance by the divisions over Northern Railway.

A. Procedure of making a conventional loco dead:

1) Attach the working loco on top of the loco, planned to dispatch dead.
2) Action to be taken to make the loco dead:
   2.1) Open DJ, lower pantograph by putting ZPT at '0', close IP cock and dead the loco by putting HBA at '0' and take out keys of BL Key, ZPT & MPJ. J-1 & J-2 to be placed at centre & to be locked. All pressures of the dead loco to be drained by opening the drain cocks and close all drain cocks.
   2.2) Keep A-9 and SA-9 in released position in both cabs of dead loco and ensure that loco brakes are fully released.
   2.3) Close all cut out cocks of A-9 and SA-9 in both cabs.
   2.4) Close L&T cock of dead loco and put MU2B on trail position
   2.5) If the loco brakes of the dead loco are not in the released condition, then follow the following steps to release them.
      - Release the control pressure of DV by manually operating the release handle to get the loco brakes released completely.
      - If there is still brake cylinder pressure left in the brake cylinder line, then close the bogie isolating cocks in both the bogies and after releasing the BC pressure, make the bogie isolating cocks normal.

B. Procedure of dead movement of conventional loco:

1) If MR, BC equalizing pipes are available, then make the pipe connection between the dead loco and the working loco similar to multiple locos and open the angle cocks, make the cock position in both the locos similar to multiple locos and work normally.
2) If MR, BC equalizing pipes are not available, then only couple BP, FP pipes between dead loco and working loco and open angle cock to charge the pressure in MR-4 of dead loco. Check BP and MR pressures in gauge of dead loco and its quantity should be equal to that of working loco.
3) Drop BP pressure from A-9 of working loco and ensure that loco brakes are applied in both locos and by releasing A-9; brakes in both locos are released.
4) If the loco brakes are not released in the dead loco, then put the MU2B of the dead loco on lead and after the loco brakes are released, put it on trail again. If still not successful, then isolate the DV & close both the bogie cocks and ensure that the brakes are released. Now the loco will work like a vehicle without brakes and will affect the brakes in the train.

5) After running for 500 meters, ensure that brakes of wheels of dead loco are released.

Note: Loco brakes in dead loco get release after about 1 min. of releasing back, therefore traction, if required, not to be taken before 1 min. of releasing the brakes.

C: Procedure for moving a 3ø loco in dead condition:

E-70 LOCO	Knorr Bremse Loco (CCB 1.5)	Knorr Bremse Loco (CCB 2.0)
Couple the dead loco in rear of the working loco.	Couple the dead loco in rear of the working loco.	Couple the dead loco in rear of the working loco.
Open the VCB and lower the pantograph, turn off the CE as per the rule and remove the BL key.	Open the VCB and lower the pantograph, turn off the CE as per the rule and remove the BL key.	Open the VCB and lower the pantograph, turn off the CE as per the rule and remove the BL key.
Close the cock (Vertical) of PAN-1/PAN-2.	Close the cock (Vertical) of PAN-1/PAN-2.	Close the cock (Vertical) of PAN-1/PAN-2.
Trip the MCB-112.1 (in SB-2).	Trip the MCB-112.1 (in SB-2).	Trip the MCB-112.1 (in SB-2).
Remove the A-9 handle in both the cabs by putting it in neutral.	Lock the A-9 in both the cabs on FS. Turn the Mode switch from lead to trail position.	Lock the A-9 in both the cabs on FS. Turn the Mode switch from lead to trail position.
Put on SA-9 release of both the cabs. Drain all MR and AR and close their cocks.	Put on SA-9 release of both the cabs. Drain all MR and AR and close their cocks.	Put on SA-9 release of both the cabs. Drain all MR and AR and close their cocks.
Check BC pressure to be '0'. If BC is not released, release it through DV. If loco brakes are still not released, close 'BC' cock and release it. Make bogie isolating cocks in "Normal" position after releasing the BC pressure.	Check BC pressure to be '0'. If BC is not released, release it through DV. If loco brakes are still not released, close BC cock and release it. Make bogie isolating cocks in "Normal" position after releasing the BC pressure.	Check BC pressure to be '0'. If BC is not released, release it through DV. If loco brakes are still not released. Release the loco brake by pressing test nipples 16TP and 20TP available at pneumatic panel.
Close cocks - 70, 74,136 and open cock - 47.	Close cocks SIFA-74 and 136 and open cock - 47.	Close cocks SIFA - 74 and 136 and open cock - 47.
Open the BP/FP angle cocks between the locos.	Open the BP/FP angle cocks between the locos.	Open the BP/FP angle cocks between the locos.
To release the parking brake, release it by pressing the release button of solenoid-30 and lock it on release position. If the parking brake is not released, release it by pulling the release spindle fitted on the parking brake activator.	To release parking brake, turn parking brake cock (PBBUS) on pneumatic brake manifold from horizontal to vertical. Parking brake will be released, check parking brake gauge for 5.0 kg/cm² pressure.	Release parking brake, if not release then release it by pressing the release button of solenoid 30. Check parking brake gauge for 5.0 kg/cm² pressure.
Drop BP pressure from A-9 of working loco and ensure that loco brakes are applied in both locos and by releasing A-9, brakes in both locos are released, keep in mind that it takes 1 minute for loco brakes to release in dead loco.	Drop BP pressure from A-9 of working loco and ensure that loco brakes are applied in both locos and by releasing A-9, brakes in both locos are released, keep in mind that it takes 1 minute for loco brakes to release in dead loco.	Drop BP pressure from A-9 of working loco and ensure that loco brakes are applied in both locos and by releasing A-9, brakes in both locos are released, keep in mind that it takes 1 minute for loco brakes to release in dead loco.
If the loco brakes are not	If the loco brakes are not	If the loco brakes are not

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released in the dead loco, then isolate the DV & close both the bogie cocks and ensure that the brakes are released. Now the loco will work like a vehicle without brakes and affect the brakes in the train.	released in the dead loco, then isolate the DV & close both the bogie cocks and ensure that the brakes are released. Now the loco will work like a vehicle without brakes and affect the brakes in the train.	released in the dead loco, then isolate the DV & close both the bogie cocks and ensure that the brakes are released. Now the loco will work like a vehicle without brakes and affect the brakes in the train.
As a final check, run the coupled locos for about 500 meters; check the release of wheel brakes and parking brake of dead loco.	As a final check, run the coupled locos for about 500 meters; check the release of wheel brakes and parking brake of dead loco.	As a final check, run the coupled locos for about 500 meters; check the release of wheel brakes and parking brake of dead loco.

The compliance report of above instructions is to be submitted to this office at the earliest.

NK Agarwal 27/09/2024

(Naveen Kumar Agarwal)
Chief Electrical Engineer/Operations

Copy to:

1) PCEE/NR: for kind information please.
2) DRM/FZR, UMB, DLI, MB & LKO: for kind information please.