



MONTHLY SAFETY BULLETIN

MAR-2022



**Zonal Safety Organization
East Coast Railway, Bhubaneswar**

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Editorial

1



Dear readers,

Safety is a culture. The new comers to the system have to imbibe it and those who are familiar have to nourish this vital culture in Railway system. Two long years of COVID as a pandemic forced the Railway to go for remote/online training. While it worked as an emergency arrangement, the comprehensive nature of training required to sustain 'Safety' culture can only be possible through off line training. Keeping this requirement in view, different departments have started supplementary training to fill the gaps left by remote training. Fresh ALPs who did on line training are being given a one week course to make up whatever the online module lacked. Similarly, other safety categories who did online initial/refresher training should be closely observed and capsules be developed and administered to fill gaps if any left after on line training.

Further during the pandemic the system ran as per the dictum - whatever can be deferred must be deferred. Field inspections, follow up on inspections, up-dation of certain information, drawings statistics etc. took a back seat. Now that the pandemic is more or less over, there is a need to work as per the dictum - whatever is required to be done, must be done.

With a record originating loading of 232 million tonnes of cargo, ECoR has proudly retained its numero uno position in Indian Railways. This has been possible due to the dedicated working of more than 40,000 railway men in ECoR. This has raised expectations of the countrymen further and we should live up to that through safe and innovative working.

Sd/-
H.K. Dutta
PCSO/ECoR/BBS

2 COIL SPRING BREAKAGES IN LHB COACHES, *An analytical discussion* Sri J.V Appa Rao, Dy.CSO/Mech

Coil spring breakages in LHB coaches are alarming in ECoR and Indian Railways. An analysis over it has been discussed in following paragraphs:-

Primary Coil Spring Breakages in LHB coaches is as follows:

Year	Holding (As on 1 st April)	Primary Inner	Primary Outer	Total Primary Springs	Failure/ 1000 population/ Month
2019-20	12400	1529	2195	3724	25
2020-21	18677	620	736	1356	6
2021-22 (Till 31 st Oct)	23000	357	431	788	4.9

Note: Population doubled in last 3 year. Decreased rate is still a concern.

ECoR

Type of Spring	2020-21				2021-22			
	BBS	PUI	VSKP	TOTAL	BBS	PUI	VSKP	TOTAL
Primary Inner	21	20	12	53	18	26	14	58
Primary Outer	9	06	43	58	16	10	47	73
Secondary Inner	03	02	00	05	05	07	00	12
Secondary Outer	02	04	01	07	04	06	01	11

Primary Spring Failure cases causing detachments of coaches:-

Year	Holding (As on 1 st April)	En-route detachment	Detachment/10000 population/ Month
2019-20	12400	06	0.40
2020-21	18677	03	0.13
2021-22 (Till 30 th Sept)	23000	02	0.14

PRIMARY SPRING FAILURE CASES CAUSING PUNCTUALITY LOSS:

Year	Holding (As on 1 st April)	Punctuality Loss	Punctuality loss/1000 population/ Month
2019-20	12400	222	1.49
2020-21	18677	82	0.36
2021-22 (Till 30 th Sept)	23000	83	0.60

COIL SPRING FAILURES STOCK WISE:-

Spring Drawing no.	Coach	Cases - Primary Outer springs / 1000 population 2021-22	Cases - Primary Inner springs / 1000 population 2021-22
LG01100 LG01101	LS	12.3	11.7
	LWSCN	8.6	4.95
1267411 1267412	LWSCZ	15.01	3.53
	LWACCW	29.53	20.4
	LWFCZAC	0	0
	LWSCZAC	0	3.4
	LWFCWAC	16.1	24.1
	LWFAC	14.8	7.4
1277142 1277143	LWLRRM	17.9	18.9
	LWCZDAC	0	40.8
1267411 1277143	LWACCN	20.5	22.4

Make-wise Analysis for Year 2021-22 against individual failure reports received at RDSO.

• *Primary Outer Springs:*

Make	Population	No. of failures	Failures per 1000 population
RSK/I	63395	142	2.24
FSK	52046	70	1.34
GBD	37179	30	0.81
AFJ	31400	47	1.50
Grueb	0	0	NA
HZP	Not Available	0	NA
L&S	Not Available	2	NA
BPS	309	2	6.47
ICF	52482	130	2.48
Zhuj	2278	2	0.88
Make available	Not Available	125	NA

• *Primary Inner Springs:*

Make	population	No. of failures	Failures per 1000 population
RSK/STLI	63395	140	2.21
FSK	52046	70	1.34
GBD	37179	36	0.97
AFJ	31400	13	0.41
Grueber	0	4	NA
HZP	Not Available	0	NA
L&S	Not Available	11	NA
BPS	309	4	12.94
ICF	52482	79	1.51
Zhuji Yurong (YR)	2278	0	0.00
Make not available	Not Available	89	NA

Primary Outer spring breakage age wise:-

Make	<0-1> Year	<1-2> Year	<2-3> Year	<3-4> Year	<4-5> Year	<5-6> Year	> 6 Years	Age not available
RSK/STLI	4	13	7	2	3	1	0	33
FSK	2	10	2	1	0	0	1	14
GBD	1	2	0	0	0	0	0	3
AFJ	3	8	2	0	0	0	0	5
Grueber	0	0	0	0	0	0	0	1
HZP	0	0	0	0	0	0	0	0
L&S	0	0	0	0	0	0	0	1
BPS	0	0	0	0	0	0	0	0
ICF	3	11	3	0	0	0	0	28
Zhuji Yorong/ YR	0	0	0	0	0	0	0	0
Others/ Not Visible	4	3	1	2	0	0	1	29
Total	17	47	15	5	3	1	2	114

- 87 % of failed spring (with age details available) failed within 3 years.

• **Primary Inner Spring breakages:-**

Make	<1-2> Year	<2-3> Year	<3-4> Year	<4-5> Year	<5-6> Year	> 6 Years	Age not available
RSK/STLI	8	7	2	0	1	0	36
FSK	4	4	2	0	0	1	8
GBD	4	1	0	1	1	1	8
AFJ	1	1	0	0	0	0	2
Grueber	0	0	0	0	0	0	1
HZP	0	0	0	0	0	0	0
L&S	0	0	0	0	0	0	5
BPS	0	0	0	0	0	0	0
ICF	5	1	0	0	0	0	11
Zhuji Yorong/YR	0	0	0	0	0	0	0
Others/ Not Visible	2	4	0	0	0	1	19
Total	24	18	4	1	2	3	90

- 83 % of failed spring (with age details available) failed within 3 years.

- **Issues:-**

1. Piece meal attention can't solve the problem.
2. Holistic attention to suspension required covering-
3. Wheel defects-Control Arm-Springs-Thickness of disc/compensating ring- Condition of rubberbump stop & pad-Bogie Frame.
4. Damper

SHELLING & SPREAD RIM



COIL SPRING MAINTENANCE & PAIRING IN WORKSHOPS

The major deficiencies observed during the audits are as under:

- Cleaning of the springs was not being done, Contact line on the end coils not cleaned properly at depots & workshops before painting.
- Paint repair being done without following the proper painting procedure. Corrosion pits and settling acted as contributory factors towards failures.
- Infrastructure for complete overhauling of springs including load deflection testing for secondary springs, shot peening machines, painting-phosphating tanks etc not available in at workshops.
- Rolling marks were observed on the surfaces of primary and secondary springs. Handling of the springs not done properly and paint gets damaged during handling.
- Parameters i.e. height under test load, alignment deviation and direction of alignment deviation were not being ensured properly at Depots.

- **Improper Cleaning**



- Improper Storage & Handling



Improper Top Coat Repair

- Corrosion & Pitting



Rolling Marks:





Repetitive Failures & Shop Schedule-I

- Few Coaches from Production Units get involved in Repetitive Failures.
- After Shop Schedules, failures from Production Units have been stop WR & WCR.

Condition of rubber bump stop & pads:

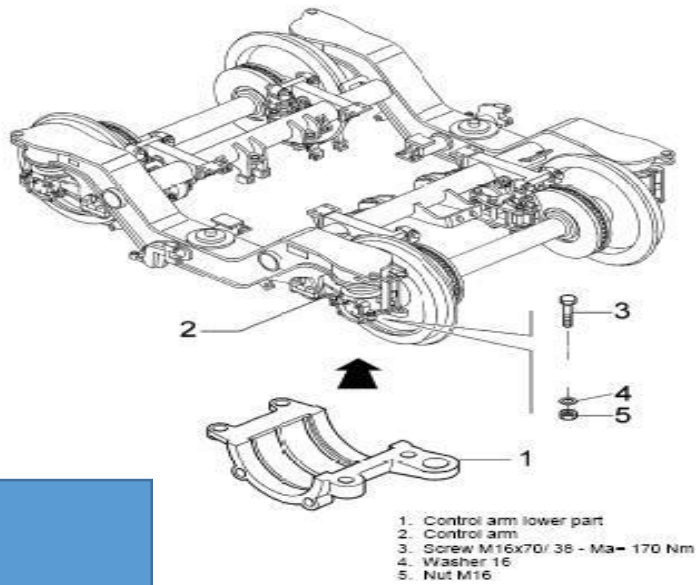


Assembly of Bogie in Workshops



Wrong
practice

After lowering the frame over the wheelsets, mount the lower parts of the control arms (1 - FIG. 4-75) to the upper one (2): insert the screws (3), the washers (4) and the nuts (5) and tighten them.

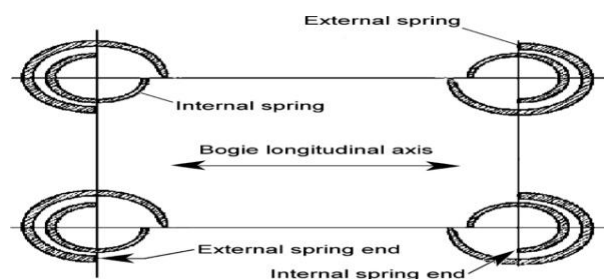


Right
practice

Proper Maintenance, Pairing & Fitment of Coil Springs:

- Maintenance as per CMI No. RDSO/2017/CG/CMI-01, including proper pairing.
- *Audit for availability of infrastructure & storage- handling-fitment-maintenance practices for coil springs.*
- *Training.*

Positioning of Primary Suspension in depots and Workshops:



3

Now a days train parting cases have been increased in ECoR as well as in IR due to uncoupling of CBC knuckles during enroot. RDSO has developed an innovation to control the lifting of CBC operating handles in Goods stuck due to vibrations on running. Following instructions/modifications in CBC operating have been issued by RDSO:-



Fax : 91-0522-2452494
Tele/Fax: 0522- 2456165

Government of India - Ministry of
Railways Research Designs &
Standards Organisation Lucknow –
226011

DID
(0522)2450115
DID(0522)246531



No. MW/CPL/BGD

Dated: 23.03.2022

1. Northern Railway, Baroda House, New Delhi-110 001
2. Central Railway, CST, Mumbai-400 001
3. Eastern Railway, Fairlie Place, Kolkata-700 001
4. Western Railway, Churchgate, Mumbai-400 020
5. Southern Railway, Park Town, Chennai-600 003
6. South Central Railway, Secunderabad-500 071
7. South Eastern Railway, Garden Reach, Kolkata-700 043
8. North Eastern Railway, Gorakhpur-273 001
9. Northeast Frontier Railway, Maligaon, Guwahati-781 011
10. East Central Railway, Hajipur, Bihar 844 101
11. North Western Railway, Jaipur-302 006
12. North Central Railway, Allahabad.-211 001
13. South Western Railway, Hubli – 580 023
14. East Coast Railway, Bhubaneswar, Orissa-751 023
15. West Central Railway, Jabalpur-482 001
16. South East Central Railway, R.E. Complex, Bilaspur – 495 004

Sub: Locking arrangements for CBC unlocking handle for freight stock.

Ref: i) North Central Railway letter No. NCR/MECH/813 dtd. 09.02.2022.

ii) Western Railway letter No. M137/52/1 dtd. 25.08.2021.

References are come from railways on train parting due to inadvertent operation of CBC operating handle due to hitting of ballast/foreign elements or due to miscreant activity. To avoid train parting due to the above reason a draft design of locking arrangement of operating handle was shared for comments/suggestion from all Zonal Railways. The same draft design is now finalised with Drg. No. WD-00046-S-01 (Alt.7).

Zonal railways are advised to start implementation and share performance feedback with RDSO on a quarterly basis.

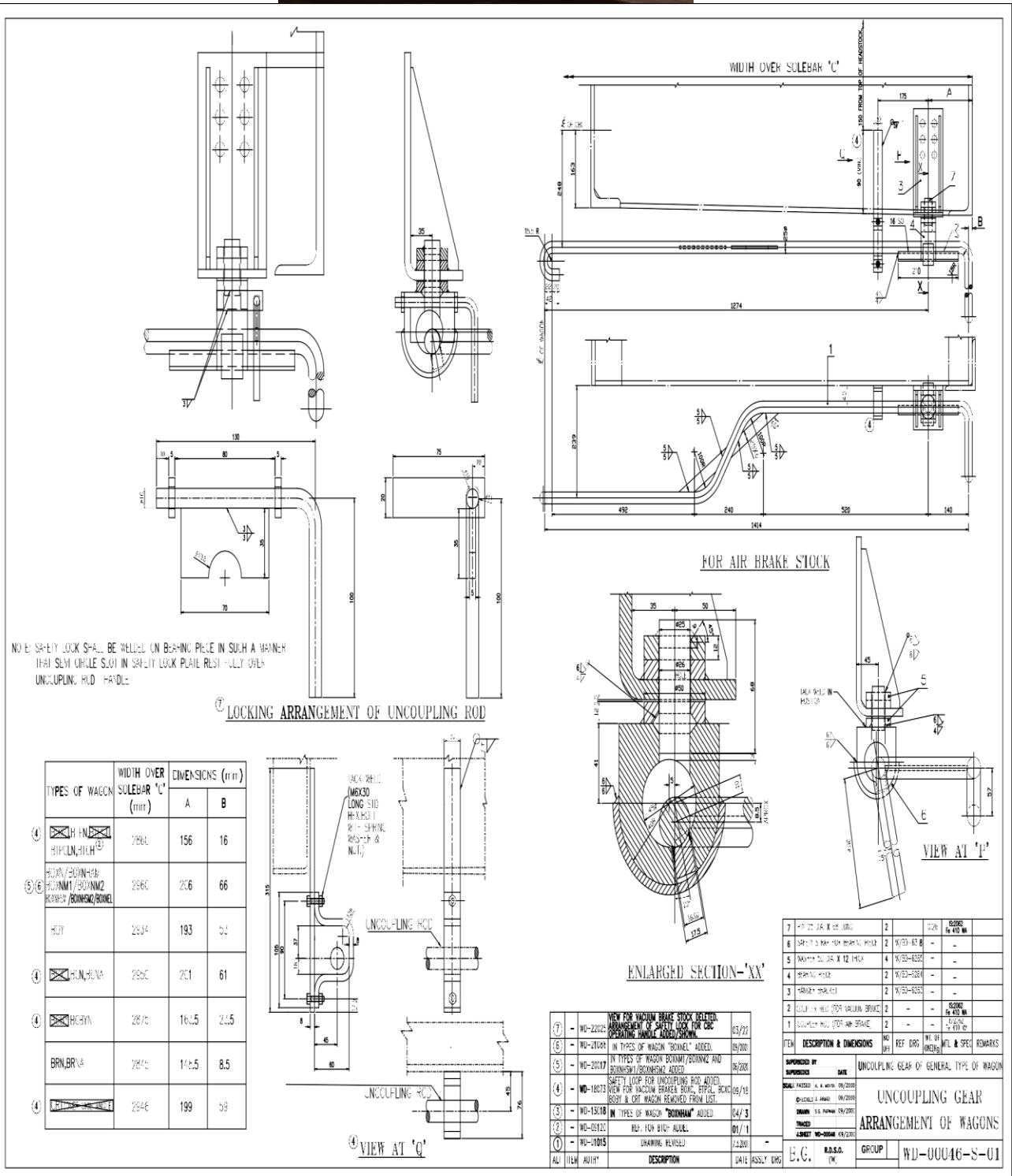
DA : As above.

Digitally signed by
SANJAY KUMAR

(Sanjay Kumar)

Director/Wagon

for Director General



4 ACCIDENT STATISTICS & BRIEF OF ACCIDENT PARTICULARS UPTO MAR - 2022:

A. CONSEQUENTIAL TRAIN ACCIDENTS AS ON MAR-2022:-

Type of Accident	2020-21	2021-22	TOTAL CHANGE
Collisions	-	-	-
Derailments	01	04(ANGL-TLHD, HDS station & two in BHNS-KMLR section)	300
MLC	-	-	-
FIRE	-	-	-
Misc.	-	-	-
Total	01	04	300

NON CONSEQUENTIAL OTHER TRAIN ACCIDENTS for 2020-21 & 2021-22 :-

YEAR	Collision	Derailment	Fire	MLC	Unusual	Indicative/SPAD	Rolling stock/ Equip. failure	Misc.	Total
2020-21	-	03 (MVJ-JRT, DMK & KDJR)	-	-	-	-	-	-	03
2021-22 (Upto MAR-2022)	-	04 (BHNS-BCHL Sabotage, JKPR, BDVR-SLPM, SXZ-BALU)	-	-	01 (BCHL Loco set a blaze)	-	-	-	05

NON CONSEQUENTIAL YARD ACCIDENTS for 2020-21 & 2021-22

YEAR	Collision	Derailment	Fire	MLC	Unusual	SPAD/ Indicative	Rolling stock /Equipment failure	Misc.	Total
2020-21	-	02 (PSA, MNGD)	-	-	-	-	-	01 HATB-MANE Elephant hit	03
2021-22 (Upto FEB-2022)	-	14(ANGL, KDJR, SCMN, NPD, BCHL, DOBL, VZM, DVD , CTS, BXQ, BDBA, CTC, BHJA & SPRD)	-	-	-	03 BBSN, BSDP-KAPG IBS, MZZ-BTV IBS	-	-	17

- There is no SPAD case recorded in 2015-16, 2017-18, 2018-19 & 2020-21 & 01 SPAD each in 2016-17 (BRAG-CTC Auto Sig) & 2019-20 (BALU) & 03 in 2021-22 (BBSN & IB signal of KAPG-BSDP, MZZ-BTV).
- There is no fire incidence in 2019-20, 2020-21 & 2021-22 till date
- There is no MLC Accident in 2019-20, 2020-21 & 2021-22 till date
- **Summary of accident for 2018-19:**Consequential Accident : 02, Other Train Accident: 05, Yard /Misc/Unusual Accident : 30 Total=37
- **Summary of accident for 2019-20:**Consequential Accident : 02, Other Train Accident: 06, Yard /Misc/Unusual Accident :10 Total=18
- **Summary of accident for 2020-21:**Consequential Accident : 01, Other Train Accident: 03, Yard /Misc/Unusual Accident : 03 Total=07
- **Summary of accident for 2021-22:**Consequential Accident : 04, Other Train Accident: 05, SPAD-03, Yard /Misc/Unusual Accident : 14 Total=26

Accident Statistics

As 31.03.2022

Category wise analysis of Accidents for 2020-21 & 2021-22

SL No	Category of Accident	2020-21					2021-22				
		RB/ Consequen tial	Other Train	YD	Misc	Total	RB/ Conseq uential	Other Train	YD	Misc	Total
1	Breach of Block Rules										
2	Casualty										
3	Collision										
4	Derailments	01 MVJ-JRT	02 KDJR, MVJ-JRT	03 DMK, PSA.MNGD	01 HATB- MANE	07	04 ANGL-TLHD BHNS- KMLR/2, HDS	04 BHNS- BCHL, JKPR, BDVR- SLPM, SXZ- BALU	13(ANGL, KDJR, SCMN & NPD, BCHL, DOBL, VZM, DVD, CTS, BXQ,BDBA, CTC)		21
5	Failure of Engine & Rolling Stock										
6	Failure of Signalling & Tele communication								01 SPRD		01
7	Fire										
8	MLC Accident										
9	Miscellaneous Accident										
10	Miscellaneous incident										
11	Other Incident										
12	SPAD									03 BBSN, BSDP- KAPG IBS, MZZ-BTV IBS	03
13	Train Wrecking							01 BCHL loco set a blazed			01
14	UMLC Accident										
	Total	01	02	03	01	07	04	05	14	03	26

Cause Wise Accident Analysis of Accidents for 2020-21 & 2021-22:

SI No	Cause of Accident	2020-21					2021-22				
		RB	Other train	YD	Misc	Total	RB	Other train	YD	Misc	Total
1	Failure of Road user										
2	Bad Engineman-ship			01 DMK		01		01(4)/ JKPR/SPAD	01(4,12) BDBA/SPAD	03(12) BBSN, BSDP- KAPG IBS, MZZ-BTV IBS	05
3	Bad Engineman-ship+ Failure of SM/ staff										
4	Poor Brake Power & Bad Enginemanship										
5	Rolling stock defect			01 PSA		01		01(4) SKZ-BALU/HA	01(4) NPD,-H/A		02
6	Defective tyres of Dead Loco										
7	Track Defect	01(4)	01(4)/MV F-JRT	01 SBP		04	01(4) BHNS- KMLR*	01(4) BDVR-SLPM	05(4) ANGL/ SCMN/VZM/ BXQ/CTS,		07
8	Boulder fallen on track										
9	Sabotage/Miscreant Activity						01(4) BHNS- KMLR	02(4,13) BHNS-BCHL derailment & loco set fire Sabotage			03
10	Door opening of wagon								01(4) DOBH		01
11	Overloading of VP										
12	Uneven loading		01(4) KDJR						03(4) DVD/BCHL /BHJA		03
13	Work-site protection failure						01 (HDS)				01
14	Failure of Shunting staff /Adoption of short cuts								01 (CTC)		01
15	Fire										
16	Equipment Failure										
17	Track Jammed								01(4)		01
18	Interference with Interlocking								01(4) SPRD		01
19	Side Grazing										
20	Failure of engine and rolling stock										
21	Casualty incident										
22	Cattle/Elephan Run over				01(4)Sbp	01					
23	Under CRS inquiry.										
24	flash flood						01(4) ANGL-TLHD				01
	Total	01(4)	02	03	1	07	04	05	14	03	26

**B. Accident per Million Train Kilometers (Comparative Annual
Performance Agreement)/MOU:-**

Year	Collision	Derailments	Total Accident	Total MT Km in thousands	Accident per MT Km
2016-17	01	06	07	50992	0.13
2017-18	0	04	04	50545	0.07
2018-19	0	02	02	54161	0.03
2018-19	0	02	02	54161	0.03
2019-20	02	0	02	55353	0.03
2020-21	0	01	01	44420	0.02
2021-22	0	04	04	57883	0.069

1. There was no MLC or fire incident during the year. No collision also recorded.
2. Due to prompt & faithful reporting of accident cases there was an increase of accidents in the current year in comparison to previous year. However, there was no causality or injury to any passenger.
3. Four consequential train accidents were recorded during the year out of which 01 attributed to sabotage & 01 passenger train due to non protection of work site. Three SPAD cases were also reported.
4. During the Covid-19 pandemic safety drives were launched & executed from time to time to detect flaws & bottle necks in system and corrective measures were taken as follow up. Total 81 safety drives were launched out of which 12 were ordered by RB & 16 by Zonal railway. Besides the above the following mega drives were also launched & executed:
 - a. Railway Board mega safety drive on "Removal of repetitive & critical deficiencies" in continuation to with previous drive on "To remove any gaps in maintenance of fixed assets, locomotive & rolling stock, conformance to procedure and human factors & training" launched & the following achieved:
 - All officers of HQ & Divisions including PHoDs, & DRMs conducted inspections on the above subject & irregularities noticed were fed in spread sheet of Railway board. The pending deficiencies are being monitored for early compliance.
 - A total of 1065 inspections were conducted, 4249 irregularities were highlighted out of which 3685 were compiled (87%) from 06.03.2022 to 03.04.2022.
 - b. A special drive was launched for inspection & rectification of defects of all the Points & X-ings, their fittings/maintenance in yards, proper drainage systems & removal of DFWR from track etc. by the officers & supervisors of safety department. Engg. department conducted inspection of 2015 nos Pts & X-ings & 909 nos were rectified for different defects. Total 424 nos of DFWR have been removed.
 - c. Regular/Frequent checks on Main line points & crossings at major yards with respect to maintenance of various safety parameters as well as the maintenance practice as a drive "To prevent yard derailments" were conducted. Staff concerned were counselled.

- d. A safety drive was conducted at Coaching Depot/BBSR & PUI from 13.01.22 to 19.01.22 for checking fire safety measures, fire fighting equipments and availability of stainless steel dustbins in coaches.
 - e. One month long mega safety drive from 26.01.22 to 24.02.22 was launched at Coaching depot PURI and BBSR. During the drive, all the safety issues related to pit lines/berthing lines, under gear & fire safety equipment's of coaches, rolling-in & rolling-out examination etc. were inspected.
5. Sixty four safety circulars were issued during the year out of which 25 were issued by HQ branch. Besides, executive departments issued various instructions/guidelines to staff on working procedures such as EOTT, DPWCS etc.
 6. Six alert messages were issued during the year compiling the analysis of important accidents over ECoR as well as other railways with cause, responsibility & lesson learnt for necessary precautions & action to prevent recurrence of similar accidents. The same were circulated to down the line staff to inculcate safety awareness among the field staff & discussed in safety seminars/safety meetings & during counselling by officers/supervisors. At training centres the same were also discussed among the trainees.
 7. A total of 14 brochures for counselling on "To avoid cable cut", "counselling S&T staff on interlocked LC Gates", "hot weather patrolling", "General instructions for better enginemanship", "Avoid stalling" & "Precautions to prevent SPAD" & 08 more to standardise counselling were issued.
 8. One brochure for "Training in five 'why' root cause analysis & fish bone diagram" was issued for up gradation of accident inquiry reports as per railway Board instructions.
 9. A guided meditation audio was circulated among running staff & other field staff to do before joining duty. Meditation is supposed to give deep rest and clear any fatigue that might have still remained before joining duty.
 10. One operating Safety Bulletin was issued & circulated in OCT'21.
 11. First monthly safety bulletin in e-format was launched by the AGM & circulated to all concerned to create safety awareness.
 12. Zonal Disaster Management Plan-2022 is uploaded in the SIMS on 30.03.2022 & ECoR website on 31.03.2022.
 13. Safety poster on 'Hot axle' was developed, printed & distributed to all stations & LC gates in SBP & WAT divisions.
 14. Working instruction/JPO on EOTT was circulated to the concerned staff.

15. An operating procedure for DPWCS (Distributed Power Wireless Control System) locos was issued by the CELE to facilitate DPWCS working.
16. INMARSAT telephone has been provided at Srikakulam station in Waltair Division.
17. Digital Camera provided in ART/ Kantabanji station on Sambalpur Division.
18. Full scale joint disaster management exercises with NDRF, ODRAF, fire brigade & other civil authorities were conducted at SCMN station of WAT division on 16.11.2021, at RGL station of SBP Div. on 26.11.2021 & KURT station of KUR division on 05.03.2022. Readiness & quick action of break down staff of ART, ARME, civil defense etc.. & their action to mitigate the disaster was found satisfactory. Some shortcomings were noted for necessary remedial action by concerned stake holders.
19. One mock drill on fire was conducted at CTC station of KUR div by creating fire at RRI which was attended by local fire brigade, ODRAF & civil authorities to rescue staff from the building & fight the fire to put it out.
20. Similarly at VSKP & RGDA two mock drills were carried out to observe alertness & readiness of the ART/ARME & brake down staff by declaring derailment of one coaching train at RGDA.
21. Despite the pandemic situation the following safety checks were done by the safety department:
 - a. Regular/periodical & Frequent checks were done of power cars, generator cars and AC coaches regarding loose fittings of electrical equipments & other equipments at coaching depots, & other locations to ensure safety. The irregularities noticed were highlighted & remedial action taken.
 - b. In view of the outbreak of COVID-19, safety department of all divisions in co-ordination with other departments counselled the public/passengers to take precaution against CORONA by distributing leaflets, using posters & campaigning through social media & SMS. Thermal screening of passengers at railway stations & patients at the hospitals were conducted by the civil defence staff at major stations/hospitals.
 - c. SAG level intra safety audits were conducted at BBS, SBP, KRPU & PRDP and irregularities/flaws in the system were highlighted for remedial action. Suggestions were also given for system improvements.
 - d. A total of 1445 safety seminars & webinars were conducted to inculcate safety awareness among the field staff & to ensure safe train operation.

- e. With respect to public awareness campaign, 567 level crossing gates, 224 villages, 169 gram panchayats & 67 market places were covered under public awareness campaign wherein 2,06,170 road/rail users & 59,004 staff were counseled. Total 2,70,808 leaflets were distributed & 15,38,315 SMSs were sent. A total of 86 Nukad Nataks were performed on "precautions to be taken while passing manned level crossings, crossing railway track & use of foot over bridge". A total of 1,05,888 number of audio visual media advertisements were made.
- f. A total of 15,259 inspections were carried out at officers level in ECoR out of which safety department conducted 2156 inspections.
- g. Total of 1141 ambush checks were carried out to observe the staff alertness, adoption of short cuts/ bad practices if any & awareness of safety rules etc.
- h. ECoR observed International Level Crossing Awareness Day on 10th June'21 with the following activities:
 - Advertisement in leading local & vernacular language news paper -21
 - News coverage in papers -56
 - Broadcast on local news channel (cable) , Radio , FM & Cinema - 11
 - TV news coverage - 14
 - Distribution of Safety Posters, Hand bills , Compact Disc (CD), Pamphlets / leaflets etc at Level Crossing -17800
 - SMS campaign to warn the risk at LC. Social media- Facebook, twitter, instgram, KOO - SMS-3365 (Social media- 5 each)
 - Interaction with press regarding issues of Level Crossing with special emphasis on the Level crossing accidents in recent years - 16
 - Deployment of Railway Scouts & Guides , Railway Cultural Team , Civil Defence, Sports organization to host safety Drive at LC , host cultural evening , Nukad Natak , village fairs, Gram Panchayat Sabha, Walkathon (run completion) with motto "Safety at Level Crossing" - 16
 - Awareness Campaign with NGOs. - 06
 - Special checks at LCs with RTO, local police & RPF - 08
 - Ambush Check with State Authority to curb the incidence of violation of provisions of MV act 1989 & section 161 of IR Act1989 by road users at level Crossings - 01
 - Total no. Inspections Footplate & ambush check conducted -109
 - Total no. of LCs covered -80
 - Total number of villages covered during campaign-23

- Total number of Panchayats / school/bus stand /Market place covered - 08
 - Number of seminars conducted -39
 - Number of road users counselled -130280
 - Number of LPs & ALPs counselled -912
 - Number of sticker pasted -816
 - Number of road show conducted -1
 - Number of large banner displayed -20
22. Forty safety category staff & 02 groups were awarded for their commendable job during duty for detecting hot axle (08 GK/ Key Man/ Trackman, 05 C&W staff, 02 Station staff), Weld failure/rail fracture/ boulder fallen/SEJ crack etc(10trackmen, 02 LP & 01 Guard), avoid accident by tripping of OHE after SPAD by Station master(02), detecting fire/flame by C&W staff, detecting OHE hanging by LP /ALP (04) & group award for break down staff for accident site management.
23. In view of the Cyclone "YASS" & "JAWAD" on 04.12.2021 and 23.05.2021 respectively, special precautions were taken as under:
- a. ART/ARME entrance/exit lines were kept free for quick movement during emergency.
 - b. Securing of stabled loads/vehicles at stations, sidings in KUR & WAT division.
 - c. Crew & Guard were kept on alert.
 - d. Advised all running rooms to preserve sufficient dry food to meet requirement for four to five days.
 - e. Additional DG sets, generator cars, power cars & extra man powers were kept ready at different stations over KUR division for restoration work if required for prompt resumption of traffic.
 - f. Engineering department was advised to keep cinder/boulder special ready to face any adverse condition due to cyclone.
24. A pre winter preparedness drive was made followed by winter precaution drive & the following were ensured:
- Provision of VTO at all stations.
 - Fog affected stations/sections identified (KUR-06, SBP-10 & WAT-10).
 - Rail fracture/weld failure prone sections identified (KUR-01, SBP-03 & WAT-10) & necessary precautionary measures taken.
 - Provision of adequate number of detonators.
 - All signage boards made retro reflective.

- All over aged AT welds are protected by modified joggled fish plate with far end bolt.
 - AT welds on bridge approaches are protected.
 - SAG level safety audit in the identified rail fracture/weld failure prone section between BRGA-BRPL of SBP div was done on 03.12.2021 & SZY-DMK & KKLUGidam section of WAT div on 17/18 Nov & suggestions for necessary remedial measures were given.
 - Regular fog position of each division were taken & monitored.
 - Weather warnings were extracted from bulletins of meteorological departments of VSKP & BBSR and circulated to field staff for necessary precaution.
 - Winter patrolling introduced with provision of GPS based monitoring of patrolling.
 - Footplate inspection by officers & supervisors.
 - Besides the above mid section checkings of patrolmen were conducted by all safety counsellors & officers to ensure proper patrolling by foot plate & also by road/foot.
25. To restrict rail fractures during winter, precautionary measures were taken and the following ensured:
- a. Examination & lubrication of fish plated joints.
 - b. De-stressing of LWR/CWR where due & inspection of LWR/CWRs.
 - c. USFD testing.
 - d. Recouplement of missing fittings in fracture prone locations.
 - e. Changing duty hours of keymen.
 - f. Close watch kept on rail temperature in particular for the sections where temperature goes below Td-30°C.
26. Summer precaution drive was made and the following were ensured:
- a. Dressing of ballast at LC approaches & cattle crossings.
 - b. Deficiencies at vulnerable buckling prone locations attended.
 - c. Hot weather patrolmen nominated & counselled.
27. Availability of patrolling equipments at all SSE/P.Way (IC) units in ECoR
28. During 2021-22, 26 accidents were recorded in ECoR. There were 04 consequential accidents, 03 SPADs, 04 other train & 13 yard accidents. The following are being ensured to contain accidents:
- a. Scheduled inspection of points and crossings by P. Way officials must. Further, deficiencies recorded during these scheduled inspections are being attended immediately and in any case for major deficiencies not later than a quarter.

- b. Rules & regulations laid down for shunting operation are being strictly followed. Proper clamping and locking of points during shunting is being ensured.
 - c. Regular counselling of locomotive shunter is done for observance of signals in yard during shunting.
 - d. Proper examination of freight loads is being done at designated locations to ensure safe working of trains.
 - e. Alertness of staff and officials in crucial situation is being watched to prevent any untoward incident.
 - f. Special attention is given to ensure adequate working knowledge of staff associated with train operation.
 - g. To contain SPAD emphasis is given on group LIs doing their assigned job, ensure adequate rest to crew and identify trait of over confidence.
29. Super checks on Joint inspection of points & crossings, Point & crossing tamping, Work site protection of engineering work, deep screening by BCM & packing by Duomatic Checking examined coaching rakes, Checking of CBC coupling of freight trains, Joint inspection of traction bonds, Isolator handle locking, braided shunt jumper & painting, Status of cable, Stabling at stations, Signal sighting, USFD testing, UNIMATE packing, Ambush check of loco, BV & AC coach simultaneously & switching off of mobile phone by LP/ALPs while on run etc. were conducted to see the quality of checks done by concerned supervisors/officers.
 30. SMS/message campaign was done through officers & supervisors of various departments to reach staff down the line on immediate safety issues.
 31. At crew lobbies bells have been fixed and every crew who signs on rings the bell and loudly speaks "No SPAD". It is a very good system in which by uttering "NO SPAD" relevant consciousness gets revoked in the mind of the crew after signing on and before taking charge of the train.
 32. Premium examination of BOXN rakes started at BOXN Depot/ANGL on 01.07.2021.
 33. Provision of CVVRS in 3-phase loco:- Crew Voice Video Recording System are provided in 24 locomotives.
 34. ROH of 7563 wagons & POH of 1518 wagons & Memu were done .
 35. Two rakes of 18452-18451 (PUI-HTE) Tapaswini Express are converted to LHB rake.
 36. Total 2213 unloadable wagons were repaired by M/s Braithwaite.
 37. On 01.02.2022 a virtual workshop was held with the Safety & Mechanical officers & supervisors of HQ & 03 divisions by PCSO on "CTRB failure in freight stock (Hot axle in Goods train). Reason & prevention thereto were discussed vividly &

- emphasized on rigorous counselling to field staff for early detection to prevent major accident.
38. A total of 1528.58 km of rail & 102875 numbers of welds have been painted with anti corrosive paint.
 39. The health of track is being regularly monitored by OMS-2000 machines. Track monitoring for 55632 Tkm of track was done during the month & all peaks more than 0.2g have been attended.
 40. A total of 364.948 CTR unit of track renewals was completed during the financial year.
 41. Deep screening of 556.844 km of plain track & 842 turnouts were done during 2021-22.
 42. Shoulder Ballast cleaning for 645.442 km of track was carried out during 2021-22.
 43. TTR for 518.25 eq units was done during the financial year in different yards.
 44. Though fittings renewal for 553.011 km of track was done during the financial year.
 45. Through weld renewal by MFBW for 44.353 km of track was done during 2021-22.
 46. USFD testing of 23905.284 km of track was done during 2021-22 for detection of flaws in rails & welds.
 47. Track Machines:- 5702.4 km of track & 2524 nos of turnouts were tamped by tamping machines during the financial year.
 48. At 338 level crossings, luminous glow sign indicators for road users have been provided in 2021-22.
 49. Toe load measurement of ERC for 1391.79 km & greasing of ERC for 2465.83 km of track was done during the month.
 50. De-stressing of LWR/CWRs was done for 1060.34 km of track done in 2021-22.
 51. Progress of 130 Kmph work on 'B' route: Provision of Double Distant Signals between BALU-PSA section of KUR division and Ex. PSA-CPP section in main line of WAT division completed at 89 locations (29 EI stations, 06 PI stations, 15 IB and 39 LC gates) and the entire 'B' route on ECoR between Bhadrak-Duvvada section is fit for 130 Kmph from signalling side.
 52. Provision of Intermediate Block Section: total 6 (Six) nos. of Intermediate Block Signalling (IBS) at Muniguda-Bissam cuttack, Sompeta-Baruva, Doikalu-Muniguda, Jujomura-Charmal, Charmal-Rairakhol & Talcher Road-Angul (Single line IB) have been commissioned to improve section capacity.
 53. Provision of Electronic Interlocking: Fourteen stations have been commissioned with Electronic Interlocking System. Also modifications to EI/ PI have been done at 17 stations.

54. Provision of Non interlocked points at Mahanadi Coalfield limited (MCL) siding connected to Talcher (TLHR) station. Nine nos of points installed at Spur 1 & 2 and 5 nos at spur 3 & 4 from Dec-21 to Feb-22. Operation facility has been provided in Porta cabins for smooth and quick operation.
55. Provision of Panel Interlocking: Existing age-old SM's Slide has been replaced with Panel interlocking at Barithengarh & Kuhuri stations in KUR Division.
56. Provision of Sliding Booms: Sliding Booms have been provided at 30 L.C. gates to improve reliability of the system and for better safety to road users.
57. Interlocking of LC Gates: 03 LC gates i.e. CT-29, L.C-154 & NG-31(>50,000 TVUs) have been interlocked as a safety measure for the road users.
58. Reliability of block working: Total 75 sets of HASSDAC have been commissioned for block working which shall ensure reliability in safe running of trains and ensure accidents do not happen due to human error in 2021-22.
59. Provision of Data Logger/RTUs: Total 15 stations/ locations have been provided in 2021-22.
60. Provision of Electric Lifting Barrier: 08 L.C Gates have been provided in 2021-22.
61. Provision of Fire Detection & Alarm Systems: 08 stations have been provided in 2021-22.
62. Air Conditioning in Relay rooms: Seven stations have been provided in 2021-22.
63. CCTV have been installed at Weigh bridge locations of Lapanga, Kandel Road and Crew Lobby of Sambalpur division. In KUR division KDJR & BBS lobbies have been provided CCTV.
64. Anti-Derailment checking (EFC) for 2429 locos were done during the financial year.
65. Speedometer data of 1372 nos. of Electric / Diesel trains were downloaded and analyzed.

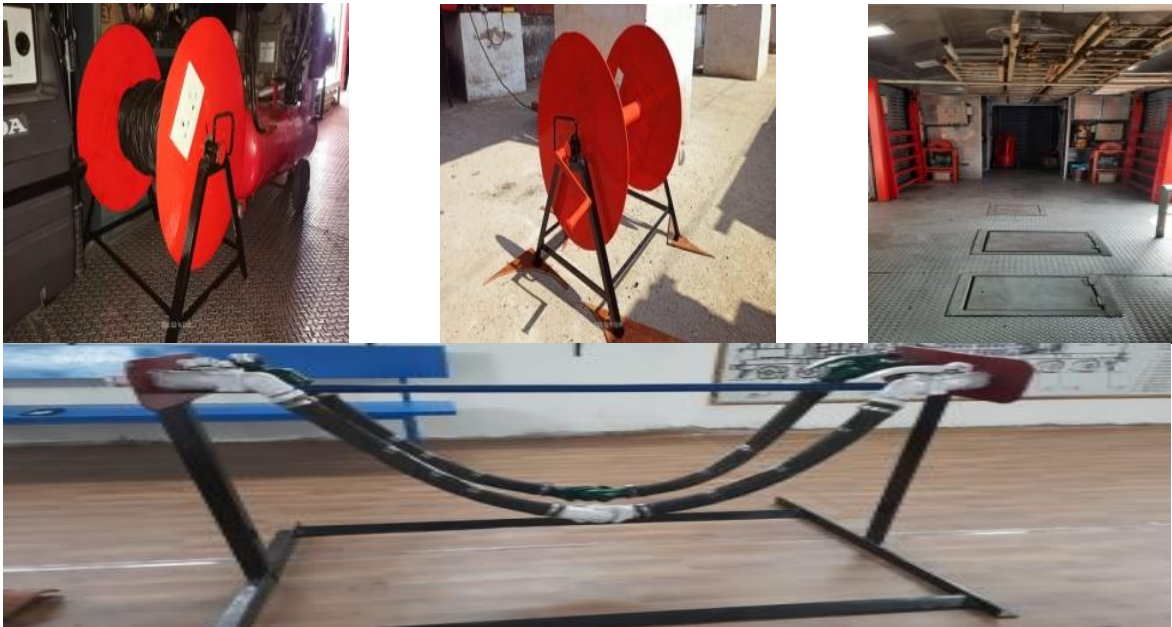
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. SAFETY INNOVATIONS/MODIFICATIONS:

- a. Remote Monitoring System in 3-phase loco: - ELS/VSKP has installed "Remote Monitoring System" (RMS) in loco no.30706, WAP-7 locomotive during this month. It is the first locomotive to have Remote Monitoring System; with this modification the online data of locomotive can be checked.
- b. Racks were modified to accommodate equipments of Mech. & Electrical in Coach no. ECo 200098 Auxiliary Tool Van of newly acquired SPARME/TIG.
- c. Provision of Hotel Load Converter :- For the first time, ELS/VSKP has provided 'Hotel Load Converter' in WAP7 loco 30726 and 30697 by modifying both power and control circuits, which is normally done at 'Production Units'. With this arrangement, three locos have become fit for working HOG rake. Another locomotive 30701/WAP-7 shall soon get hotel load converter.
- d. ELS/ANGL commissioned Digital wheel distance measuring gauge, which measures the distance between wheels of locomotives precisely within 30-60 sec with clear visibility in pits and other low light conditions with a memory capacity of 50 measured readings.
- e. Special type clamps are made to fix on the rails bonds so as to avoid hole on rail.
- f. To improve night visibility in WAG9 & WAG7 locos 6000 LUX head lamps have been fitted on trial.
- g. Additional hinges provided on doors of BOXN wagons on trial basis to address the problem of closing and locking.
- h. Danger lamps were provided at the entrance of the Pit Lines for safety of staff during under gear examination work at night time.



- i. Motorized Ladder of Tool Van was modified and fitted in tool van of SPARME/TIG for easy movement of man and materials.
- j. One wire drum made to keep cable of plasma cutter in SPARME/TIG.
- k. One model for connecting BP & FP air hose with Angle cock has been made by C&W/TIG and kept in Model Room of Crew Lobby/TIG.



(Wire Drum for cable of Plasma Cutter) (Motorized Ladder) (Model of BP&FP)

Rolling-in and Rolling-out items.

The following items should be checked by Rolling in and Rolling out staff for Safety of trains.

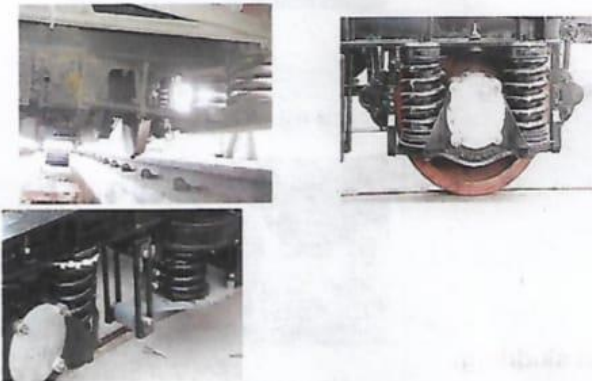
1. ICF Coach: (ICF coach maintenance manual para 107 b)

SN	Component	Remarks
01	Hanging part	Truss bar, Hanger, Equalizing stay rod, J-Bracket, Axle box cover etc.
02	Hot axle	Smoke from axle box bearing.
03	Broken part	Spring, Truss bar hanger
04	Air Pressure leakage	Hissing sound from air bracket pipes.
05	Deflated air spring	Uneven air spring
06	Brake binding	Sparking from wheels.
07	Wheel skidding	Unusual sound of flat places.
08	Foot board bend	Damaged / tilted foot board.
09	Buffer height variation	Nil axle box clearance, excessive bolster clearance, body resting on trolley (Thumping sound)

2. LHB Coach

SN	Component	Remarks
01	Hanging part	Anti-roll bar, link, axle box face plate, water pipe etc., WSP Cable & Battery box securing arrangement.
02	Hot axle	Smell/smoke from axle box.
03	Broken part	Primary and secondary springs, Deflated air spring etc.
04	Wheel skidding	Unusual sound from wheel tread.
05	Air Pressure leakage	Hissing sound from air brake pipe.
06	Brake binding	Brake indicator applied or released (Green or Red) FIBA.
07	Securing arrangement of all tanks	CDTS tanks, Bio-toilet tanks, under-slung tank, AR tank & Brake control module including footboard and CBC uncoupling device.
08	I.V. Couplers sagging	Sagging of IV coupler
09	Whistling sound	From brake disc, brake pad, bearing front & back and earthing box.

4. Following items to be checked in ICF Design Coach during Rolling-in/Rolling-out

SN	Component	Remarks
01	Hanging Part Equalizing stay rod Axle box cover etc. J-Bracket, Truss bar, Hanger	
02	Hot axle	 Smoke from axle box bearing
03	Broken part	Spring, Truss bar hanger. 
04	Air Pressure leakage	Hissing sound from air brake pipes 

1. Following items to be checked in LHB Coach during Rolling-in/Rolling-out:

SN	Component	Remarks	
1	Hanging Part a. WSP Cable, b. Axle box face plate, c. Anti-roll bar, d. Link, e Water Pipe & f. Battery box securing arrangement.	     	
2	Hot axle Smell/Smoke from Axle Box.		
3	Broken Part a. Primary Springs b. Secondary Springs,	 	
4	Wheel Skidding Unusual sound from wheel tread		

5	Air Pressure leakage Hissing sound from air brake pipes.		
6	Deflated Air Spring Uneven Air Spring		
7	Brake Binding a. Brake indicator applied or released [Green or Red] b. Condition of FIBA	 	
8	Securing arrangement of all tanks. a. CDTs tanks, b. Bio-toilet tanks, c. Under-slung tank, d. AR tank e. Brake control module, f. CBC uncoupling device and g. Footboard	     	

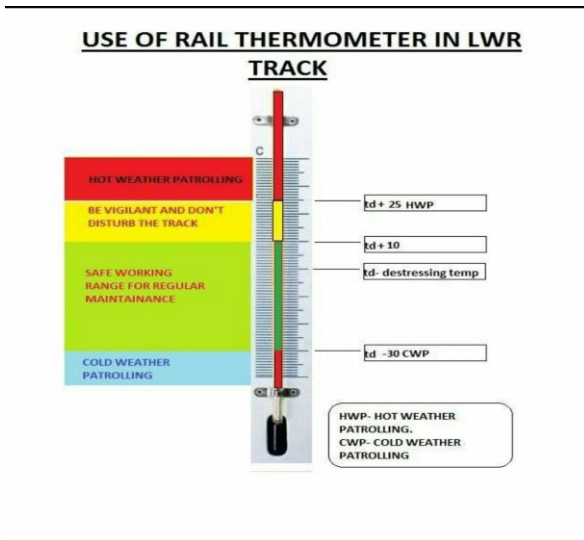
9	I.V. Coupler Sagging of IV coupler		
10	Whistling sound a. From brake pad, b. brake disc, c. Bearing front & back, and d. Earthing box	 	



SAFETY SEMINAR AT MDTC/MIPM/WAT



YOGA BY CREW & GUARD IN RUNNING ROOM



TRACK MEN TRAINING AT DETS/SBP



AMBUSH CHECK OF EMERGENCY TELEPHONE SHOCKET & USE OF PHONE AT IB SIGNAL BY CREW.





AMBUSH CHECK AT IB SIGNAL BY MAKING DANGER ON APPROACH OF TRAIN TO OBSERVE CREW ACTION BY SR.DSO/SBP



DERAILMENT DUE TO UNEVEN LOADING & RESTORATION WORK



FISH BOLT BROKEN & MISSING



Danger lamps were provided at the entrance of the Pit Lines for safety of staff during under gear examination work at night time.

Div.	RB	Other Train	SPAD	YARD	Misc./ Unusual	Total
KUR	1. On 14.09. 21 KUR/BCN derailed out of which 10 capsized with loco derailed by front wheel at Bridge No.393. D-4 2. On 03.12.21, next to engine LVPH front trolley all wheels of No. 12246 exp train derailed at HDS station due entanglement of rail during rail dolley work going on without site protection. D-3	1. On 14.09.2021 train no. ME/JSPK-26 while admitted from SKND side in R/1 of JKPR yard over shoot Starter signal & derailed by loco after dashing the dead end at 04.18 hrs. D-5 2. On 09.02.2022 at 16.40 hrs front trolley of wagon no ECR221012172759 of train No. ME/NY-JSWT after passing Solari Station derailed due to Hot axle. Grounded at 22.30 hrs & track fit at 23.00 hrs. DN line fit for train operation. D-5	1. On 29.06.2021/ 20.08 hrs Train No. MRDL BOOST arrived BBSN Stn on R/1 at 17.25 hrs & controlled as LP was unable to work reported by GD & ALP. When ambulance reached site the LP suddenly started the train without Gd & ALP & passed the starter on danger. Stopped after disconnecting OHE by SM through TPC. SPAD/H-2 2. On 14.02.2022 at 10.38 hrs train No. 15906 Exp passed IB signal S-15 at Km 494/7-9 between BSDP-KAPG in danger after stopping. H-1 3. On 24.02.2022 train No. 12516 (Salimar-HWH) exp passed IB Signal No. S-19 at Km 326/21-23 between MZZ-BTV station in danger & stopped by application of Emergency & switching off of OHE. H-1	1. On 15.05.2021 train no. ME/IREL While admitting train no. ME/N/IREL on R-4 of ANGL yard wagon no. NR 10039660847 BOXNM1 Load 38th from loco rear trolley all wheels and wagon no. NWR 12110529845 BOXNHAM Ld 39th from loco both trolley all wheels got derailed at km 155/42-43 due to Uneven loading on wagon. D-6 2. On 06.06.2021 Train No ME/NYG/NBOX -E While admitting in R-5 of KDJR yard wagon no. SMNL 22262013109 BOXNHL/E 8TH from engine both trolley all wheels, wagon no. SMNL 22262013116 BOXNHL/E 9th from engine rear trolley all wheels and wagon no. SMNL 22262013192 BOXNHLE 10th from engine both trolley all wheels got derailed near point no. 46A due to residual load on wagons. D-6 3. On 27.12.2021, 03 wagons of train No. PICB-BLCA got derailed at 02.50 hrs of BDBA station of KUR DIV due LP passed point No.26A of R-2 unauthorized thinking signal given to him. D-6 4. On 27.01.2022 while detaching one sick wagon from E lotus SBCI-96 at CTC yard R-8, 03 wagons derailed due to improper shunting of lotus train. D-6	NIL	11
SBP	NIL	NIL	NIL	1. On 09.07.2021 train No. HIMB BTAP while admitting on Mail line ,R/2 at NPD yard rear trolley of wagon no ECoR 46441220324, 14th from rear, D-6 2. On 21.09.2021 BV of B/PPAP while leaving DOBL derailed near starter. D-6 3. On 13.12.2021 train No. BOBRN/MAVB while proceeding to siding from R/8, 04 wagon of coal load derailed out of which 03 capsized due to defective track of newly laid point no.58B by siding authority. D-6	NIL	03

Div.	RB	Other Train	SPAD	YARD	Misc./Unusual	To tal
WAT	1. On 26.11.2021 at 20.50 hrs, train KVL-45/10 derailed at KM 422 between BHNS-KMLR single line section in KK line, 03 locos & 19 wagons derailed out of which 18 capsized due to sabotage by Maoist. Track fit 16.05 hrs of 28.11.2021. D-4 2. On 17.12.2021 at 04.31 hrs, 17 BOXN load of train No. BDXX/11 got derailed out of which 14 capsized at KM 420/8 to 421/23 between BHNS-KMLR, BG single line electrified section of KK-2 due to suspected rail fracture. D-4	1. On 23.04.2021 08516 Krdl spcl Exp passed through BHNS at 20.58 hrs. and One engine WAT end trolley, SLRD leading trolley got derailed at Km.No. 432/25-28 due to sabotage/ Miscreant activity by naxals. N/1 under train wrecking. 2. On 22.09.2021 VK 107/06 derailed by rear trolley of 4rth E/wagon from rear at Km 41/17 between BDVR-SLPM. D-5	NIL	1. On 01.07.2021/04.30 hrs Train No. KVS-26/G9 While passing from R/12 of SCMN station, 04 wagons BOXNHL derailed at point No. 145A. Yard derailment, D-6 2. On 25.07.2021 train No. BVF-12 load derailed by 07 wagons while coming from NMDC siding at Uni flow line point No 101/A obstructing BCHL-BHNS section, D-6 3. On 15.11.2021 at 02.30 hrs train DN-CTKART (BLC) LOCO No.27414 WAG-7/DDU leading trolley derailed due to sharp curve and inadequate crossover length in diamond crossing at VZM yard. D-6 4. On 01.12.2021 at DVD yard 4th from rear of train no NBOX/E derailed & entangled with 5th wagon while admitting into the yard due to residual load coal around 15 percent sticking to derailed wagon right side wall leading to offloading of left wheels. D-6. 5. On 04.12.2021 leading loco rear trolley all wheels & middle loco front trolley all wheels of train No. AMKC04/04 derailed at CTS yard at 09.00 hrs due to buffer entangled between front and middle loco and got derailed. D-6 6. On 11.03.2022, while admitting NMGPV-19/G-9 in R/3 at VEJA station of at 0.05 hrs 06 NBOX load wagons derailed starting from 3rd from engine. D-6 7. On 16.03.2022 during admission of NBOSE from PSPG siding to R/2 at SPRD yard 8th wagon from BV derailed over point No 22A due to two route caused by interlock failure on account of RVNL work for 3rd line. D-6	On 22.02.2022 at 21.10 hrs KMSIL-02/MU-G9 stopped by Naxals & put the leading cab of loco-41553 on fire after passing BCHL Adv starter. N/1 train wrecking.	12
Grand Total	04	04	03	14	01	26

Indicative train accident/SPAD from JAN-MAR 2022:-

Sl No	Date & Time/ ID	Divn Type & Section	Train No.	Brief of Accident	Cause	Responsibility	Cost of Damage	Recommendations	Action taken/
01.	14.02.2022 10.38 hrs ID: 20220212002 SPAD/H-1 JAG inq /KUR headed by Sr.DEE(OP) 16.02.2022- 23.03.2022.	KUR DIV BSDP-KAPG IB Signal No. S-15 at Km 494/7-9 Accepted by DRM 24.03.22	15906 (DBRG- CAPE) Bibek exp Dibruhar h to Kanyakuma ri	Train No. 15906 Exp passed IB signal S- 15 at Km 494/7-9 between BSDP-KAPG in danger after stopping.	LP/ALP failed to control the train in time & passed the IB signal at danger	Primary: Sri Sagi Raju/ LP & Sri Saroj kumar/ALP both VSKP BW: Sri C.R Chinara/SM/KAPG & Sri BVS N Murthy/Gd/M- Exp/VSKP	NIL		
02.	24.02.2022 at 05.50 hrs ID: 20220212004 H-1 JAG inq /KUR headed by Sr.DEE(OP) 26.02.2022- 25.03.2022.	326/21- 23 between MZZ-BTV in KUR DIV Accepted by DRM 25.03.22 Accepted by AGM on 12.04.20 22	UP 12516 (Salimar HWH) exp	Passed IB Signal No. S-19 at Km 326/21- 23 in danger & stopped by application of Emergency brake & switching off of OHE.	LP/ALP failed to control the train in time & passed the IB stop signal at danger Rules violated GR 3.75(1),SR 3.75.01(i),GR 3.78(1)(a),GR 3.78(3),SR 4.08.01, RB letter 98/Safety(A&R)/1 9/16 of date 25.10. 2019.	Primary: Sri Sanjay Bhut Kumar /LP & Sri Vibek Rajan/ ALP both from KGP/SER(failed to control the train in time and not observed guidelines for operations of train during foggy weather BW: Sri H.K Maity /Sr.Gds Gd/KGP for allowing the train to start from spot after incident without exchanging PN with SS/MZZ & Sri T.K Mohanty /SM/MZZ	NIL	1. Safety Seminars on various issues leading to SPAD and safety rules to be discussed amongst the LPs and ALPs. 2. Regular Ambush speedometer checks are to be done to check whether the LP is following the procedure of Foggy weather working. 3. All crew should mandatorily Sign ON/OFF both at source and destination during LR. 4. Guard should exchange PN with SS in rear and LP before allowing the train to start after overshooting incident indicating the details of authority. 5. Universal system for IB signal post telephone should be introduced over Indian Railways.	

Other Train accident/ Non consequential Train Accident from JAN-MAR 2022:-

Sl	Date & Time/ ID	Divn Type & Se	Train N	Brief of Accident	Cause	Responsibility	Cost of Damage	Recommendations	Action taken/
01.	22.02.2022/20:35hrs ID: 20220212003 N/1 Sr Suub 23.0222-07.03.22 train wrecking. Restoration:03.17hrs	BCHL station between BCHL-BHNS Accepted by Sr.DSO on 07.03.2022	KMSIL-02/MU-69	Around 100 miscreants stopped the train, detain the crew, put banners & set ablaze the leading loco cab of loco-41553 after passing BCHL Adv starter.	Miscreant/Naxal activity.	No Rly staff responsible.			
02.	09.02.2022/16.40 hrs ID: 20220212001 D-5 JAG headed by Sr.DEN/E/KUR 11.02.2022-24.03.2022 Cost of damage:- Rs. 44,46,000	KUR-PSA At Km 519/3-5 near Solari station of KUR Div. Accepted by DRM 24.03.2022 Accepted by AGM on 12.04.2022	ME/NY-JSWT/3	Front trolley of wagon no ECR 221012172759 after passing Solari Station derailed by all wheels . Grounded at 22.30 hrs & track fit at 23.00 hrs. DN line fit for train operation.	Hot axle leading to jornal cut off left front wheel of front trolley of wagon No.ECR 22101272759 NBOXNHL leading to derailment. Rules violated SR.4.29.01 & GR 4.42	Primary: KGP workshop Secondary: SSE C&W DDU BW: Sri V.S Vijeta/Tech-I/KUR, Sri J samantsinghar/Engg GK, Sri B.K Chotroi/TPMA/KPXR, Sri J Mohato/Engg GK LC-213, Sri S.Pattnayak/Engg GK LC-216, Sri G.Majhi/Engg GK LC-209, Sri B.N Patal/TPMA/NKP, Sri B N Behera, Engg GK LC-238, Sri Mirza Soren, Engg GK LC 241, Sri M Behera, Engg GK LC-242, Sri H.B Swain/TPMA/KPXR. Sri J.B Sunderray /TP/TapSri S.Parida/TPMA/NKP, Sri A Kumar /TP/BSDP, Sri M R Biswal/TPGNGD & Sri S.K Sahoo/Ss/BALU	Rs 44,46,000 P.Way 22.46 Lacs, C&V 22 lacs.	- The over hauling practices for CTRB in workshops should be done as per manual and regular audit should be conducted to eliminated system lapses. - Overdue ROH and PHO wagons should not be allowed in service. - Rolling in examination should be religiously conducted by C&W staff posted at BHC, KUR & PSA. - Hot Axle Hot Wheel (HAHW) detection system should be proliferated in division to detect such cases. - Station staff and LC gate staff should be counselled for observing the abnormalities during passage of train and report the same immediately. - At SLZ station TP should be posted to exchange signal while the SM is occupied with other work.	

Yard Accidents from JAN-MAR 2022:-

Sl No	Date & Time/ ID	Divn/ Type & Section	Train No	Brief of Accident	Cause	Responsibility	Cost of Damage	Recommendation Action taken
1.	27.01.22 22/03.5 0 hrs ID:20220 112001 D-6	Kur div/CTC derailment.	E-lotus SBC 96	During detaching of sick wagon on R-8 of CTC yard, three wagons got derailed.	1. Improper securing of the rear portion of the train by shunting staff, 2. BP angle cock of 58 th wagon & loco in closed condition due to which the rear locomotive created the BP& brake which had been applied got released 3. Failure for ungrouping of DPWCS loco by shunter before starting shunting operation.	Primary: 1. S Pradhan/ TPMA 2. P.K Nayak/STM 3. Sri T.K Prusti, STM/CTC 4. Sri H.B Rana/Sr.ALP Secondary: Sri B.Kumar,Sr.ALP/CTC	C&W- 23,98,51 Com: 90,000/- Total-Rs 24,88,51 9	Working instruction on DPWCS issued
2.	11.03.2022/ 05 hrs ID: 2022031200 D-6	VEJA station yard in KK-1 WAT Div	NMGPV- 19/G-9	While admitting in R/3, 06 NBOX load wagons derailed starting from 3 rd from engine.	Uneven loading & defect track geometry.	Primary: 1. NMDC Authority 2. Sri R.S Prasad, SSE P.WAY/PFU(IC) 3. Sri A.V Rao, SSE/CSL/BCHL		
3.	16.03.2022, at 02.00 hrs ID: 20220312 002 D-6	WAT DIV SPRD Station	NBOXE	While drawn out from PSPG siding on R2, 8 th wagon from BV derailed at point No. 22A at SPRD yard After arrival of goods train in R4, SM operated point No 30 to normal but at the same time point No. 22A released to normal resulting two route. RVNL work is going on for third line & there was interlocking problem which was tested after accident & found fault	Root cause is cable fault, which caused point failure resulting in automatic operation of point no. 22A along with point no. 30. The failure might have occurred on or before 5 th March as adduced but not attended since the failure was not highlighted and proper action not taken by S&T staff. This kind of coincidence of Point No.22 and 30 i.e., when point No.22 and 30 is in reverse condition, while operating Point No.30 to normal condition the Point No.22A is being operated to normal condition simultaneously, whereas the Point No.22B remained in reverse condition from on or before 05.03.2022 to 16.03.22 Point operated	Primary:- 1.Sri. Manoj Kumar,ESM /SPRD has failed to observe simultaneous operation of Point No. 22 in coordination with normalisation of point NO.30 and take corrective action on date 05.03.2022 even though he has attended the failure of point no. 22A and not mentioned the incident in Signal failure register. 2. Smt. Debasmita Konhar, SSE/sectionI /sig/RGDA failed to inform the incident on dated 05.03.2022 to higher authorities and failed to find out the root cause of point failure 3. SS/incharge/SPRD Sri. S.K. Mohanty failed to inform the incident on dated 05.03.2022 to higher authorities Secondary:-		1. As per Para 15.2.3(b) of IRSEM, cables may be laid underground either in the trench, in ducts, in cement troughs in pipes or any other approved manner, but in this case cables layed barely which should be avoided at any cost. 2. As per Para 15.2.1(k) IRSEM, cable markers of approved type shall be provided which should be placed at suitable intervals and at diversion point to mark the route. Avoiding marking result in difficulty in maintenance, fault finding work and other construction works. 3. As cable markers and cable pipes or other protection are not available at SPAD. There is chance of cable cutting or damaging in RVNL works. Proper procedure to be followed while

					while passing train without operation of concerned points on panel due to point failure and lead to derailment.	1. Senior Site Engg. S&T/RVNL Sri Parvesh Pathak allowed the civil engineering RVNL to work in the SPRD yard with heavy machinery without the diversion of existing cable. 2. JE/PW/Spl/SPRD Sri Devanand attended the failure without asking the disconnection memo and carried out the rectification work of point No. 22 on dated 05.03.2022 and failed to enquire ESM regarding the cause of failure. Blameworthy: -NIL.	executing works. 4. All points and signal failures to be recorded and reason for failure to be any analyzed case wise and cause wise, to avoid recurrence. 5. Local level PC of data logger should always be working condition since conflicting movement of point No.30 and 22 on 5th March was not noticed by ESM. Rectification not done. 6. Schedule to be prepared for observation of data logger by JE regarding movement of his section. 7. Periodicity of meggering of cable may be reduced considerably from present 6 months of tail cable and 1 year of main cable. 8. Periodical testing of circuit and points by ESM,SSE and other officials should be transparent. 9. conflicting testing of points should be done periodically or after rectification of points by S&T staff.
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TRAINS RUNNING WITH POOR BRAKE POWER MAY CAUSE SPAD EN-ROUTE IF IT IS UNDETECTED:

- **On 12.03.2022** Train No.TISR/BFNS was stopped by Loco Pilot Sri G.N. Rao/MPIM after conducting 'brake feel test' and found poor brake power at PUN. The train was controlled the train at NWP station. A total of 20 wagons found with IOP (Inoperative pistons) out of 44. Train was given fit with brake power of 77%. Total load of the train was 43+1 (3322 Tons) and commodity was steel billets.
- BPC was issued by C&W staff/ CTC at JKPR after intensive examination with 93% brake power on 10.03.2022. No crew reported poor brake power from JKPR to PSA. Locomotives were interposed and in place of 31980/WAG9 single power multi locos 27729 + 27834 /WAG7/KZJ were brought in.
- **It is apprehended that:**
 - a. BPC issued by the C&W staff at JKPR was not correct. They did not check properly the number of brake cylinders working and the brake power.
 - b. Brake feel test at the first opportunity by the outgoing Loco Pilots from JKPR to KUR and KUR to PSA was not conducted.

An analysis of Implications due to raising of speed from 110 to 130 Kmph between Bhadrakh and Duvada in ECoR in HWH-CHE Main Line.

Sri S.K.Nayak , Dy. CSO(Engg).

Raising of Maximum Sectional Speed of Bhadrakh - Duvada section from 110 to 130 Kmph in HWH-CHE Main Line is under process. Details of analysis of PSRs are as under.

Comparison of Av speed due to raising of speed from 110 to 130 Kmph								
Section	BHC-PSA in KUR Div				PSA-DVD in WAT Div			
Max Speed	130 Kmph		110 Kmph		130 Kmph		110 Kmph	
Lines	UP	DN	UP	DN	UP	DN	UP	DN
Total Length in Km	390.864	390.864	390.864	390.864	231.5	231.5	231.5	231.5
No of PSRs	67	68	24	31	37	41	10	11
Length of PSR in Km	84.571	92.53	29.059	42.041	59.32	73.058	11.09	15.668
Av Speed in Kmph in PSR patch	100.721	100.703	78.734	82.2282	102.64	103.66	75.62	77.78
Length of patch with Accl & Decln in Km	100.5	105.4	37.2	48.05	55.5	61.5	16.5	16.5
Total length with controlled speed in Km	185.071	197.93	66.259	90.091	114.82	134.558	27.59	32.168
% of length with controlled speed to total length	47.349	50.639	16.952	23.049	49.598	58.124	11.918	13.895
Av speed in Kmph in Accln and Decln patch	112.985	114.669	92.708	95.2419	115.65	115.61	102.5	102.045
Length with Max Speed in Km	205.793	192.934	324.605	300.773	116.68	96.942	203.31	199.332
Av Speed in Kmph	119.29	118.93	106.03	105.199	117.41	117.866	107.73	107.252

Due to this, number of PSRs will increase from 34 to 104 in UP line and from 42 to 105 in DN line. Average speed has been calculated without taking into consideration of TSRs and stoppages at different stations by the coaching trains. Gain in average speed is 10 to 13 Kmph as against rise of 20 Kmph of MPS. But no. of PSRs is increasing by 250% for which the Loco Pilot will have to control speed frequently. Length of patches with controlled speed rises from 13 - 26% to 47- 58% of the total length of sections.

Most of the PSRs are on account of sharp curves. Speed potential of 1.75 degree curve is 130 Kmph, any curves sharper than 1.75 degree are having PSRs. There will be 67 PSRs between BHC and PSA & 57 PSRs between PSA And DVD on account of sharper curves

with respect to 130 Kmph of MPS. A case study of flattening sharper curves to 1.75 degree in KUR division has been worked out the details of which are as under.

Ext Deg of curve	Radius of curve in M	Length curve	Deflection angle	Prop Degree of curve	Radius of curve in M	TC due to flattening	Length of flattened curve. In M	Appr cost @ ₹ 10 Cr/Km	Addition land in Ha. (App)
3	583	590	51.08	1.75	1000	45.11	961	9.61	1.442
3	583	720	54.03	1.75	1000	51.01	1113	11.13	1.669
3	583	710	57.96	1.75	1000	59.62	1131	11.31	1.697
3	583	680	53.05	1.75	1000	49.00	1066	10.66	1.599
3	583	800	65.82	1.75	1000	79.61	1279	12.79	1.918
3	583	795	65.33	1.75	1000	78.25	1270	12.70	1.905

Techno-economic studies of flattening the sharper curves may be carried out based on which decisions may be taken to take up the work to eliminate the PSRs.

There will be 22 nos. of PSRs due to bad bank and 50 nos of PSRs because of various types of constraints in the yards.

PCSO has forwarded the above analysis with following observations .

An analysis has been done to find out the impact of increase in MPS on main line (BHC-DVD) from 110 to 130 Kmph. One factor which might affect safety is the increase in number of PSRs by 2.8 times from 76 to 213, observing so many PSRs along with additional TSRs which might be imposed, is going to affect the attention span of LPs.

While a majority of PSRs are on account of curves which shall be difficult to address in short run as depicted in the analysis on six such curves, the others like the ones needing formation treatment and some other remedies should be taken up for removal so that PSRs are not as high in number as projected. In 2021-22, it was targeted to remove 6 PSRs on main line. So far all 6 PSRs have been removed. There are 22 PSRs imposed for other than curvature due to raising of speed which should be removed on priority.

GM had agreed with the views of PCSO and advised PCE to plan out for removal of 22 nos. of PSRs in 2022-23.

PCE observed that existing assets have been made fit for raising of sectional speed to 130 KMPH with the existing infrastructure. To eliminate PSRs proposals were sent to Railway Board for its sanction in 2021-22 works programme, but the same was not sanctioned. All these proposals shall be processed once again for its sanction in 2022-23 and the same noted by the GM.

COMPARATIVE STATEMENT:(A)

Name of the items		2020-21 (Apr-Mar)	2020-21 Upto MAR	2021-22 Up to MAR	% Variation with respect to corresponding period of previous year
Safety Audits	INTRA	02	02	04	200
	INTER	0	0	0	0
	DIV	45	45	55	22.22
Safety Drive		79	79	81	2.5
Safety Seminars/Webinar		992	992	1445	46
Safety Circulars		43	43	64	48.83
Public Counselling		2,38,536	2,38,536	2,05,970	-13.65
Staff Counselling		1,09,277	1,09,277	59,004	-46
Ambush Checks		1125	1125	1141	1.42
Inspections		15048	15048	15259	1.4
Inspections (SAFETY)		1950	1950	2153	10.41
Refresher		7872	7872	7081	-10.04
Leaflets		2,73,415	2,73,415	2,82,708	3.39
Mock Drill		105	105	159	51.42
Nukad Natak		63	63	84	33.33

B. ALERT MESSAGE-06:

Consequential train accidents are threats to safe train operation as they result serious damage to the railway property & huge loss on account of long interruption to train services. Some of these accidents with cause, responsibility & lesson learnt are as under for necessary precautions & action to prevent recurrence of similar accidents.

Sl. No	Brief Description	Cause	Responsibility	Discussion/Lesson learnt
1.	ON 25.08.2021 at about 13.30hrs train no. 02346 DN Sarighant Spl. while entering line no. 2 of Chaygaon Station(Main line) between KYQ-JLPT section of RNY division of NFR got derailed by four coaches (6,7,8 & 9 from rear) over point no. 102/104 & 106/108 blocking main line. No casualty and injury to passengers. It is non electrified, D-route, BG-Single line section. Speed of the train 20 kmph at the time of derailment with a fair weather, clear visibility and the gradient is 1:2200 rising. Cost of damage Rs. 23,56, 386.00	1. Due to failure of traffic LC gate no. NN-249 the train was piloted in as the home signal could not be taken off. But there was no clamping and padlocking of point no. 102/106. Also the point under the wheel was operated by EBPU button. 2. Working of train without ensuring clamping and padlocking of points after signal failures even though route didn't appear on panel. 3. Rectification work being carried out on Operating Panel without disconnection. Defective button circuit of CGON causing undue operation of Point 106/108 and 102/104 while train was still over points. 4. All the four persons viz Sukleswar Kumar, SS/CGON, Pradip Kumar Deka, Sr. Tech/Signal/CGON, Pinku Das, Khalasi/Helper/Signal CGON, Akshay Kumar MS/ Porter /CGON were working hand in glove with each other resorting to shortcuts and unsafe working of train without ensuring clamping and pad locking of point after signal failure even though route did not appear on panel.	1.Primary: a.Sukleswar Kumar, SS/CGON. b.Pradip Kumar Deka, Sr. Technician/Signal 2.Secondary: a.Akshay Kumar, MS Porter/CGON. b.Pinku Das, Khs./ Helper /Signal/CGON 3.Blameworthy: a. Chandip Thakuria, TI/AZA b.D. Das, SSE/Signal /GLPT. 4 Sri Ashish Kumar, SSE/ART/NBQ responsible for incomplete videography . 5. ART/ARME Staff of NBQ for not attending ART/ARME Call. 6.Person found responsible for delay in turning out ART/ARME SPARMV/ GHY :Delay 32 minutes. On duty CHC/Pig/LMG, Sri Indrajit Bania, ART/ NGC :Delay 17 minutes: on duty CHC/Plg/LMG, Sri Indrajit Bania	1. On 25.08.2021, Sri Pradip Kumar Deka, Sr.Tech./Signal/CGON and Sri. Pinku Das, KH/Helper/Signal/CG ON were available in S&T maintenance room. 2. After passing of 07030 UP Secunderbad Spl, at about 12.30/12.35 hrs on duty SS/CGON, Sri Sukleswar Kumar, told Pradip Kumar Deka, Sr. Tech. /CGON verbally that Gate lock indication button of LC Gate NN-249 found loose and requested to attend the same. 3. Then without taking failure memo and disconnection, at about 12.40hrs Sri. Pradip Kumar Deka, Sr. Tech./Signal/CGON opened the front glass cover of the panel to attend the Gate lock button and opened the back cover of the panel to see visually whether any loose wire below Operating Panel. Panel Front cover was opened after removing the seals of EBPU & RRB Emergency button. 4. At about 13.05hrs Line clear granted for Train No. 02346Dn to SS/MRZA and at about 13.10hrs, out report

				received through TLBI. At 13.12hrs. SS/CGON told on duty Gateman of LC Gate No. NN-249 to close the LC Gate. Gateman closed the Gate and relayed the Gate lock indication to SM/Panel but Gate lock indication could not be acknowledged by on duty SS/CGON due to existing button failure. At 13.15hrs, when SS on duty tried to take off Dn Home Signal, it also did not respond & route also not appeared due to SM Key being in Off position. Since the Gate was still in failed condition, SS/CGON then sent on duty P/Man, Sri Akshay Kumar to receive the train by issuing T/369(3b) for Dn Home Signal for line No.2 without clamp & padlocking of the relevant points even though route did not appear on panel. 5. Train started from home signal at around 13:29:48 after getting the T/369(3b). SS on duty Sukleswar Kumar tried to take off DN advance starter and starter but signal/route did not appear since SM key was in OFF position. Now Pradip Kr. Deka Sr.Tech/Signal and Pinku Das, Signal Khalasi operated the point under the wheel using Emergency point button resulting derailment.
2.	On 20.03.2021 at about 06:44 hrs. At GZB station of	The SAG level enquiry committee came to the conclusion that "The consignment consisted of electronic	a. Primary Responsibility:- Sh Abdul Muttalib	a. The lease holders and their staff to give full details of the

	Delhi Division, the guard of train no. 02004 (NDLS-LJN) Shatabdi Spl. while detrained to check LV Board, luggage seal, noticed smoke from the luggage room of power car no. 199393 NR LWLRRM & intimated all concerned. Fire was doused at 08:50hrs.	gadgets, inflammable liquid (Sanitizer), cloths, mobile batteries, speakers etc. Some of the gadgets were found energized and in ON condition. It is quite possible that the fire originated due to spark in mobile batteries in parcel or batteries in other electronic gadgets due to short circuit under the pressure of other parcels, which was further aggravated by presence of highly inflammable items i.e. sanitizers which were also available in the same compartment”.	Consignee who booked electronic gadgets & other inflammable items and declared them as Courier goods vide forwarding note and declared wrong details of the consignment. b. Secondary Responsibility:- Sh. Dheerendra Yadav CS/New Delhi for failing in supervision to ensure safe handling and stacking parcel packages while loading at New Delhi.	commodities before booking to avoid such incidences. They should be taken up stringently if such details are found false. b. It has been noticed that transportation of parcel from office to coach is done with help of some private labours having no authorization or identity card. Proper authorization and identity cards to be issued by competent authority. No such persons should be allowed in parcel area and platform without authorized identity cards or permit. c. Items like batteries, inflammable liquids such as sanitizers etc. should be carried in secured containers to avoid contact with other items. d. Electronic gadgets should be allowed only after removal of batteries from tem. e. Red tariff manual should be reviewed with respect to loading of various goods in view of recent up gradation/change in technology. f. No batteries should be allowed for booking in luggage just like airlines where no batteries are allowed in baggage. g. Fire Extinguisher may be made more effective. RDSO/Railway Board may examine possibility of installing water mist
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				type fire extinguisher of higher capacity in place of DCP type fire extinguisher being used currently. h. Guards are not switching off the lights of luggage portion after loading as per Rly Board's instruction circulated by Board's Freight Marketing Circular No. 17 of 2006 dated 10.04.2006. A special drive to be launched for the implementation of instructions. i. Automatic fire detection and suppression system should also be installed in luggage portion of SLRs and Power Cars. j. Heat insulation paints should be provided on panelling of luggage room and partition. k. Quality of CCTV presently installed should be improved so that all areas within station are covered. l. A metallic grill should be provided over the light fittings in ceiling of luggage portion to avoid breakage and short circuit.
3.	On 18.12.2020 at about 10:53hrs derailment of loco no. 40349 WDP4D of Train No. 02502Exp (ANVT-AGTL) at km 74/4-6 of KUGT station, Dharamnagar-Agartala Section of LMG division, BG Single line, Non-Electrified E-route Section of NF	1. When speed was raised in the curve, the desired curve parameters & proper super elevation should have been maintained / ensured. 2. Loco was allowed to run without replacing vital parts scheduled to be changed during yearly & 03 yearly loco schedule which were done.	a. Primary:- 1. Sri Himansu Dhar, Sectional SSE/P-Way/PASG due to Improper maintenance of track. 2. Sri Jayanta Kachari, SSE/P-Way/IC/DMR due to Improper maintenance of track and improper joint measurement. b. Secondary:- 1. Sri P.P Das, ADEN/KXJ	Recommendations:- Proper maintenance input may be given and ensured before raising of speed on track. Supervisors should be given proper training on joint measurement and the joint measurement should be conducted as per prescribed guide lines DISCUSSION:- 1. Ballast was scattered on both the sides of the rail

	Railway. At the time of derailment the speed of the train was 69 kmph, visibility was clear, fair weather. System of working is ABS. COST OF DAMAGE: Engg.:RS616000, MECH: Rs. 90271 S&T Rs. 128672, Tota lRs. 834943.		due to Lacking in supervision for proper maintenance of track. 2. Sri Deepak Kumar, TI/DMR as he did not involve himself in the measurement and signed on improper measurements. 3. Sri Diluwar Hussain, SSE/D/IC/SGUJ for allowing loco to leave shed by passing the 3 yearly & yearly maintenance schedule. c. Blameworthy:- 1. Sri P.Singson,SSE/ C&W / BD/AGTL for improper joint measurement. 2. Sri Amit Jaiswal, Sr. DEN/V/LMG for failing to assess the severity of the issue.	leaving shoulder naked on the curve. Due to less and scattered ballast on shoulder and less ballast on the crib, track parameters could not be maintained; which explains the derailment mechanism. Before raising of speed at curve the related track parameters should be ensured along with the desired super elevation. 2. Yearly and three yearly schedule of loco was found overdue. Many vital items which are supposed to be changed in three yearly schedules were allowed to be continued. For Example, <u>Dampers are a must replacement item in three yearly schedules. However, those were allowed and all three dampers got damaged.</u> 3. Loaded spring height measurement indicated that the minimum height measured was 425 on axle no 6 (spring no 1 trolley LHS in direction of train) and maximum 445 on same axle (spring no 2 RHS front trolley in the direction of train). There was a difference of 20mm in spring height in same axle and that was the culprit axle which got derailed first. The permissible variation in loaded height with working load is +3 mm o -7mm. Height
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				was much beyond permissible limit. 4. Springs were out of tolerance i.e. defective to the tune of 24% to 66% depending on the group of springs. 5. Buffer height difference in Loco and power car is 40mm which also contributed in biased running.
4.	On 26.06.2021 at about 03:30hrs front axle both wheels of leading Loco no. 16863 WDAVA on long hood site of Train No. 02414 DN NZM-MAO Rajadhani Exp. derailed at km 190/024 in UKSHI – BOKE station of Konkan Railway due to bolder fallen / detaching of withered rock mass. After derailment the train travelled a distance of 259 mt. The guard reported the incidence to all concerned. There was no injury/ casualty of any passenger.	A large withered rock mass has fallen on one side of track between arch and springing level of the Karbude tunnel. As the locomotive was worked on long hood, RHS driving cab and due to inadequate visibility /Smokey area inside tunnel, the LP applied emergency break only around 100 mt. ahead of the debris of the boulders which blocked the track and was hit by loco. The boulder got struck between B-9 Coach (9th from loco) and side wall of tunnel.	Primary- Nil Secondary:- Sri Anand Kumar AEN/RN incharge had not inspected the tunnel before monsoon as per schedule. Blameworthy:- SriM.G.Yadav Patrolman.	a. Although this derailment did not result in major consequences and there was a narrow escape, but this incident had all the ingredients of becoming fatal. Hence, there is an urgent need to building capabilities for managing tunnel rescue operations in coordination with all concerned departments. b. Advanced inspection techniques with use of tools and equipment, Laser scanning etc may be adopted, especially for long tunnels. c. Inspection check list may be revised duly covering methods of inspection as presently only visual inspection and sounding with hammer in unlined portions are being carried out which appears to be not adequate/effective. Presently the inspection Check List is as per Indian Bridge Manual which

				may be elaborated by KRCL further. d. Reporting of Patrolman at every 02 hrs interval or at two different ends of beats alternatively to be considered for night block section patrolling even though they are exchanging the diaries. However, this practice is already being followed by watchman in day time. e. Rest timings of adjacent beat patrolmen may be staggered, if feasible. f. For sections prone to boulder fall, tree fall and OHE mast fall etc, Rock splitters, tree cutting equipment etc to be kept in SPARME cum MFD TVs also and SPARME cum MFD TV movement to affected section is only to be considered. Other machines movement can be resorted only on availability of sufficient time without detention of SPARME cum MFD TV, as SPARME cum MFD TV has got S&T, EL and KFD equipment which will help in simultaneous tackling. g. Establishing communication is most important in utilizing golden hour. h. High power & lightweight torches to be provided to patrolmen/watchmen to ensure improved lighting for inspection
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				during night time. i. Providing Rock-bolting in staggering, standard type & Shotcreting in tunnel in a phased manner covering the entire area including those areas which were not covered during construction phase in the past are to be taken up. j. Inspection by a Geologist in Long and other identified tunnels once in a year after monsoon. k. Ensuring proper communication from inside the tunnel was a major constraint. This lack of adequate communication inside tunnel can create havoc in case of serious accidents involving passengers, immediate intimation to all concerned. l. Problem on inadequate light inside the tunnel was cited by the running staff. The permanent lights switched on all the time inside tunnels are not well illuminated & impair visibility & the non permanent lights switched on by the tunnel ventilation staff on demand. This must be ensured for better Illumination.
5.	On 31.01.2021 train no. 02701 (CSTM-HYB) started from PF No. 9 at CSTM station of Mumbai division, Central Railway. At a speed of 10 to 11 kmph the crew felt jerk. Breaks applied and	a. The JAG enquiry committee concluded the derailment occurred due to poor maintenance of crossover where deficiency of ballast cushion, abrupt variation in versine, variation in gauge and poor fastening of rails. b. Instead of 250 mm ballast cushion 150 mm was available out of which only 75 mm was	a. Shri. Arun Kumar Mehta SSE(PWAY)/BY, Incharge CSTM was held primarily responsible for poor track maintenance violating GR 15.01. b. Shri. Mohammed Ezaz Alam-	a. The scheduled joint inspections irregularities should be complied and recorded. b. Calibrated track gauge and wheel gauge should be made available to ensure measurement during investigation and

	train stopped after passage of 14 coaches from the platform, the ALP found 09472 GS second from loco rear trolley all wheels derailed.	clean ballast. The versine of crossover was not maintained as per para 429(4a). c. The gauge at crossing point should be 0 to 4mm with respect to gauge prescribed in standard drawing i.e 1673 mm. The gauge was found more i.e., 1679 mm. The cross level variation is also more than the prescribed limit as per para 520(3) & 525(2).	SSE/PWay/CSMT was held secondarily responsible GR 15.02 (a). c. Blameworthy:- Sri N.Nagendra Raju SSE/C&W/HYB for not ensuring proper A & B clearances of coach No. SC 09472 GS during primary maintenance.	maintenance work. c. SSE/PWay stated that design of this crossover is not standard due to this ERCs are slipping away from location frequently. d. They have been providing wooden strips with ERCs to protect the ERC from slipping. e. All turn out should be made available as per standard design. Till that time additional manpower and material should be provided for maintenance.
6.	On 24.08.2021 train no. EC/BTSS/Goods /32255 while on run between NATSAR-RAJGIR stations in DNR division of ECR, 13 wagons got derailed out of which 9 capsized resulting stoppage of train operations.	Although the JA Grade Committee of this accident enquiry has not been able to pin point main reason of derailment but they have highlighted less availability of ballast on track, nil cushion, sleepers are embedded in soil in track portion including the POD near trespassing location & pumping location near the point of drop of wheel of empty wagon which is the main reason of jumping of wheel of empty wagon at point of drop.	a. Engg. Department for poor maintenance of track was held Primary responsible. b. Guard Sri R.K.Verma/TIA and Loco Pilot (Goods) Sri S.K.Bhakta for not detecting the moving of derailed empty wagon upto 2.5 km from POD causing capsized of 16 wagons. However guard is more responsible than LP in their failure of detection of travel of derailed wagon and timely application of emergency brake are held as secondary responsible.	1. Tamping of track in entire section to be done immediately with provision of sufficient ballast. 2. All trespassing locations to be attended frequently seeing the deposition of soil and less ballast. Especially in rainy season, it should be ensured that there is no water logging in track portion. Frequent soil cutting to be done and track to be made proper ballasted track. 3. Guard to be counselled to be more vigilant while performing duty and immediately apply emergency brake to stop the train after noticing any abnormality during running of train without wasting any time in trying to communicate with LP/ALP of the train through walkie-talkie. Guard should not feel hesitant in application

				of emergency brake. 4. LP/ALP to be more vigilant while doing look back of the complete train moving on curve portion till the end of curve. 5. ARTs should have adequate steel sleepers for quick restoration.
7.	On 22.04.2021 at about 05:15 hrs train no. 05012 DN (CDG-LJN Spl.) collided with passing road traffic on Spl class level crossing gate no. 343A in Bilpur-Miranpur Katra block section of Moradabad division of NR resulting derailment of loco no. 70328 WDG4G by 6 Wheels of front trolley & death of 5 persons and injured one. After passing Tisua station, the LP found distant signal of Bilpur station which is visible just after passing the advanced starter of Tisua being in straight line of vision, was double yellow indicating starter danger. When the train reached home signal of Bilpur station the starter and the advanced starter were taken up and turned green. The train passed Bilpur station at 05:12 hrs and while approaching the LC gate was found open to road traffic and road traffic was	LP & ALP of train no. 05012 Passed the gate signal at danger & failed to control the train before the gate.	Primary: 1.Sri Muslim LP/P/MB failed to make out the gate distant and home signal violating GR 3.81(1). He also failed failed to whistle continuously from W/L board & did not apply emergency break violating G&SR 4.40 (1&2). 2.The ALP Sri Sanjay Kumar was also held primary responsibility as he failed to keep a good lookout during run violating GR 4.40. He also failed to confirm the signal aspects of the gate signals violating the GR 3.83/2, whistle continuously from WL board & failed to apply emergency break.	

	passing. The train hit a truck, a motor bike & derailed at a distance of 500 meters beyond the LC.		
8.	On 23.07.2021 at about 06:10 hrs derailment of loco with 1 SLR & GS of train no. 01134 (MAJN-CSTM/ Diverted train) between LIM-DDS section of Hubli division of SWR at the speed of 40 kmph, ascending gradient 01 in 37 & 7.1 degree curve. Causality- Nil, Time for restoration 32.00 hrs.	Due to sudden landslide in location	No railway staff responsible
9.	On date 15.08.2021 Train no. KRDS/BOXN load derailed between section BD-CNDB BSL division of CR.	Rail fracture. Loss CNW two crores and Engg. 60 lakhs and OHE 1 lakh.	Details awaited

Sl.No	Brief Description	Cause	Responsibility	Discussion/Lesson learnt
10.	On 05.07.2021 at 10:24 hrs front SLRD rear trolley 4 wheels of train no. 03053(HWH-Radhikapur Spl.), load 13=26 got derailed at km 106/04A at point no. 333B while moving from up main line to plat form no. 4 at BWN Station.	Inability of train combination WPD4D and ICF to negotiate diamond crossing resulting in derailment as prima facie. The enquiry committee found while negotiating the curvature of the double slip diamond crossing the derailment occurred due to sudden jump of all wheels of rear trolley of SLR. This happened due to sudden large lateral force exerted on the rear trolley on account of entanglement of front buffer of SLRD and rear buffer of Loco WDP4-D(longer length).	No one is held responsible as the yard layout is a static factor whereas the train composition is a variable factor, and the above composition caused entanglement of buffers while negotiating the curvature. An entanglement of buffers on inside of curves is a known/established phenomenon for such group of locos, though as per Speed certificates issued by RDSO no restrictions are stipulated for operation of such train composition on sharper curves.	1.The movement of train formation consisting of longer length loco such as WDP4D with conventional ICF Rolling Stock from Main Line to PF No. 4 through the double slip diamond No. 330A and 333B at BWN Yard should not be permitted. 2.RDSO to examine the negotiability of WDP4-D and similar longer length Locos under rake formation with

				conventional ICF coaches over sharper curvature in view of buffer entanglement problem and to issue the necessary instructions/restrictions for movement on sharper curve. As per Speed Certificate No. SD.WDP4D. 11 dt 15.03.2012 & amendment no:-1 dated 03.05.2013 at present no restriction is stipulated.
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C. TWO LINER SMS MESSAGE CAMPAIGN: MAR-2022

Two liner SMS/message campaign has been initiated through officers & supervisors of various departments & then down the line staff to inculcate safety awareness among field staff on the following safety issues:

- a. After a major work in the yard all cables should be meggered afresh.
- b. During tower wagon check, the face of staff working should be in the direction of movement of tower wagon to prevent accident.
- c. LP & ALP - While approaching danger signal, call out signal-aspect repeatedly till the train comes to dead stop.
- d. Isolate the wagon /coach immediately from the rake whenever a smoke /fire is detected inside to prevent spreading of fire to adjacent wagons/coaches in yards/stations/en-route.
- e. All C&W maintenance staff should check following aspects meticulously before issuing/endorsing the brake power certificate (BPC) for brake power:
 - Outward movement of piston of brake cylinders in each coach/wagon during brake application.
 - Physical gripping of brake blocks with wheel flange in each vehicle in brake application condition.

D. SUPER CHECKS ON INSPECTIONS & OTHER ACTIVITIES :-

The following super checks were conducted to see the quality of checks done by concerned supervisors/officers in the month of MARCH-2022:

- a. On 11.03.2022 SSO (S&T) during inspection of point no 46A (conventional) at JEN station of KUR Div found the following deficiencies which were complied after highlighted:
 - LH tongue rail setting was 2 Sleepers only which was improved to 5 sleepers.
 - Pt no 46/A, 3rd stretcher bar was worn out; same was replaced.
 - LH tongue rail chipped off by 100 mm with depth of 05mm. Reconditioning done.
- b. On 27.03.2022, SSO (S&T) during inspection of newly commissioned Argul station of KUR Div found block proving LVCD was not commissioned between Argul-KUR & Argul-KPXR. The same was intimated to Dy.CSTE (Con) & complied on 28.03.2022.
- c. On 21.03.2022 during super check at NWP OHE Depot. by Dy.CSO(Elect.) found tower wagon marker light, tail lamp & wiper of both cab not functioning. The same intimated to Sr.DEE/TRD immediately & got complied.
- d. On 06.03.2022 Dy.CSO (Engg.) inspected KDRP Yard points & crossings;
 - Advised for reconditioning/replacement of the burning nose found at CMS crossing point No.17A. The same was complied with renewal of crossing.
 - Advised dressing of recently unloaded ballast at point No.17B & 21A. The same was complied.
 - Advised to weld LH & RH rear SRJ of point No. 17A, 17B, 21A & 19A. The same were welded & complied.

- e. In view of 02 SPAD cases in FEB'22 where in crew passed the IBS in danger, Sr. DSOs of KUR, SBP & WAT with safety councilors conducted ambush checks at different IB signals by making the same danger on approach of trains and observed the action of crew with respect to the signal and control of the train. Speedometer charts of selected trains were also checked to see if the LPs conduct brake feel & brake power tests as per laid down instructions.
- f. Sr. DSOs of KUR, SBP & WAT with safety councilors conducted ambush checks on stabling of vehicles & observed exchange of signal by crew and Guard with station staff & gate keepers at various stations / level crossing gates.
- g. Besides the above, point & crossing, CMS crossings, SEJs & other track related matters were ambush checked in different yards.

E. OTHER SAFETY ACTIVITIES DURING THE MONTH MAR-2022

1. LC Gate No. NG-31 between Naupada- Parlakhemundi in Waltair Division was interlocked with provision of IPS, ELB & RTU.
2. Two sliding booms were provided at L.C NG-31 between Naupada- Parlakhemundi & at L.C no.-414 between Tilaru-Urlam in Waltair Division.
3. Following Section/Siding/Equipment have been electrified with 25kv supply during this month:-
 - a. Argul-Haripur gram by pass line 2.656 RKM (3.225 TKM).
 - b. BOT line No. 4 of Paradeep port on 06.03.2022 consisting of 3.135 TKM.
 - c. OHE on at Spare line no. L-1 & L-2 in coaching Complex/BBS as regular measure on 12.03.2022 consisting of 0.999 TKM.
4. Total 54 unloadable wagons were repaired by M/s Braithwaite (Cumulative-2400).
5. Seventeen wagons were rehabilitated by M/s Powertech (Cumulative-380).
6. ROH of 885 wagons (Cumulative-7563), POH of 121 wagons (Cumulative-309) & POH of 95 coaches including MEMU (Cumulative-1209) were done during the month.
7. A total of 04 hot axles detected & rectified through salvage (Cumulative-49).
8. Fire extinguishers have been provided in 200 Nos. of Non AC coaches of PUI based trains.

9. Motorized Ladder of Tool Van was modified and fitted in tool van of SPARME/TIG for easy movement of man and materials.
10. At Coaching Depot/BBS, a quality circle was created for the purpose of quality improvement of coaching maintenance. Every week a meeting is being conducted with under gear supervisors as well as other concerned supervisors for analysis of sick marking of coaches and necessary improvements in maintenance practice to minimize the sick marking.
11. Two nos. of Single Car Test Rigs were received from M/s Neils Rail Products Pvt. Ltd., Kolkata, West Bengal on 05.03.2022. Both the machines were commissioned at Coaching Depot/BBS on 23.03.2022.
12. The Baker Air gauges for measuring (digitally) dimensions of Cup & Cone of CTRB, APM & LSD test bench were commissioned during the month at VDPD wagon repair workshop of WAT.
13. Renovation work of Coach No - ECo - 93876 RT/SV of ART/SBP was done.



14. The health of track is being regularly monitored by OMS-2000 machines. Track monitoring for 4509 Tkm of track was done during the month & all peaks more than 0.2g have been attended.
15. Percentage of defect in new AT welds in ECoR has reduced to 1.2% during the month of Mar'22 from 4.2% during corresponding month in 2020-21.
16. A total of 30.87 CTR unit of track renewals was completed during the month.
17. Plain track 55.03 km & 102 turnouts were deep screened during the month.
18. Shoulder Ballast cleaning for 66.684 km of track was carried out during the month.
19. TTR of 57.75 eq units (10 turnouts + 1 derailing switch + 27 FS sleeper sets + 21 switches + 71 CMS xings + 44 TWS) was done during the month in different yards.
20. Through fittings renewal for 27.15 km of track was done during the month.
21. Through weld renewal by MFBW for 7.95 km of track was done during the month.
22. USFD testing of 1699.23 km of track has been done during the month to detect flaws in rails & welds.
23. Track Machines:- Total 34.27 km of track & 9 turnouts were deep screened by BCM machines, 639.35 km of track & 240 nos of turnouts were tamped by tamping machines, Shoulder ballast cleaning of 18.8 km of track by FRM machine & track renewal by PQRS for 4.32 km of track have been done during the month.
24. At 24 level crossings, luminous glow sign indicators for road users have been provided during the month.
25. A total of 336.59 km of rail & 12818 nos of welds have been painted with anti corrosive painting during the month.
26. Toe load measurement of ERC for 130.85 km & greasing of ERC for 207.31 km of track was done during the month.
27. Destressing of LWR/CWRs was done for 57.54 km of track.
28. L.C. NG-31 between Naupada-Parlakhemundi in Waltair Division has been interlocked with provision of IPS, ELB & RTU.
29. Sliding Booms has been provided at L.C NG-31 between Naupada-Parlakhemundi & at L.C no.-414 between Tilaru-Urlam in Waltair Division.
30. Provision of 2nd crossover for Gangavaram Port at Gate Junction facilitated with twin single line working between (GPL & VDPD, VSPS & GJN) has been commissioned to improve mobility & also to provide reception facility along with an additional route for DN trains from FPY to GJN in Waltair Division.

31. Point machines of 220 mm have been provided for 13 nos Thick Web switches in Waltair Division & 19 nos in Khurda Road Division.
32. Anti-Derailment checking (EFC) for 240 locos has been done.(Cummulative-2429)
33. Speedometer data of 131 nos. of Electric / Diesel trains have been downloaded and analyzed. (Cummulative-1372).

IMPORTANT CIRCULARS/DRIVES/ INSTRUCTIONS ISSUED TIME TO TIME:-

A. SAFETY CIRCULARS:

Technical Circular No.01/2022

No ECoR/EL/TRO/420/03

Date 28.03.2022

Sub: - Operating Procedure of DPWCS (Distributed Power Wireless Control System) Locos

In view of synchronizing failure in section or at siding, the advantage of DPWCS is not achieved as desired. Recently during shunting movement of DPWCS loco, it was not ungrouped which causes dashing and derailment of wagons. Hence a simplified procedure is here by circulated for wide counseling to crew.

Before starting ensure:

1. The train should be in standstill condition and both locomotives should be connected in same formation.
2. Energize both locos (Driving and Remote) maintain MR Pressure more than 8.5 kg/cm² and BP pressure up to 5 kg/cm² in both locos.
3. First Connect the BP pipe of the Driving loco to the train formation, then connect Remote loco BP pipe to the train formation.
4. The grouping should be initiated in remote/slave locomotives.

(A) Procedure for Loco Preparation:

	Working CAB				Non Working CAB				COCK positions			
Locomotive	On E70: A9 position	On CCB: A9 position & LT switch position	On E70: SA9 position	On CCB SA9 position	On E70: A9 position	On CCB: A9 position & LT switch position	On E70: SA9 position	On CCB SA9 position	47	74	70	136
LEAD	RUN	RUN / LEAD	APPLY	FULL	NEUTRAL	FS / TRAIL	RELEASE	RELEASE	Close	Open	Open	Open
REMOTE/ Slave	NEUTRAL	FS / HLPR	RELEASE	RELEASE	NEUTRAL	FS / TRAIL	RELEASE	RELEASE	Close	Open	Open	Open

(B) The grouping procedure is tabulated below:

GROUPING (ON REMOTE LOCOMOTIVE)	
1	Put the BL key in Drive mode and wait for 504 Node then charge the loco, after charging MR more than 8.5 kg/cm ² . Put the BL key in OFF position and take out the key (Node should be 612).
2	Switch on DPWCS MCB
3	On Log IN Screen: - Enter LP's ID and Press down Key ↓ - Enter password (2400) and press down key ↓ - Enter Train number and press ENTER key. Log in Successful message will appear on screen.
4	Click DPWCS set up (key-5), Select REMOTE (key-2) and press down key ↓, Select working cab direction (Cab-1 front or Cab-2 Front), and press down key ↓. Enter ' LEAD LOCO ' number and press enter key.
5	For Confirmation press (key-4) and select 'YES' Then press INITIATE (key-1).

Sr No	GROUPING (ON LEADING LOCOMOTIVE)
1	Switch on DPWCS MCB
2	On Log IN Screen: - Enter LP's ID and Press down Key ↓ - Enter password (2400) and press down key ↓ - Enter Train number and press ENTER key. Log in Successful message will appear on screen.
3	Configuration of Train Formation: - Click on DPWCS setup (key5) - Select LEAD (key-1) and press down key ↓ - Select working CAB direction (Cab-1 front or Cab-2 front) then press down key ↓ - Select no of Remote locos ("1" or "2" or "3") then press down key ↓. - Enter Remote loco number then press down key ↓ - Select (key-1) for wagon selection, Enter no of wagons then press ENTER key. Note: Select (key-2) for no wagon (in case of Light Engine). For conformation press (key-4) and select "YES",
4	On GROUPING Screen: Press 'key1' for 'Initiate Grouping', - Apply A-9 brake in 'FULL service' for BP continuity check, message will appear on screen. - Put A-9 in to "FULL Service". BP pressure of both locos start dropping. - After getting message 'Release Brake' put A-9 handle on release position. - When the BP in driving and remote locos shows 5.0kg/cm² then display shows "BP continuity OK and Grouping successful". Now the driving loco and the remote loco are connected successful through DPWCS and thereafter all operations are controlled from the Driving Loco.

(C) UN GROUPING PROCEDURE (V.V.IMPORTANT)	
1	Train must be in standstill condition and loco brake should be applied
2	In leading locomotive, press "Ungroup DPWCS" and press "Yes" to confirm the ungroup request.
3	Both locomotives get ungrouped and log in screen will be displayed on DDU in both locos.
Note:- This is required before detaching locos from train or when both locos are required to work independently. Without ungrouping, the locos will still be in remote controlled mode even after detachment from train. After ungrouping, put MCBs in both locos "off" and the locos can work independently.	
(D) NEUTRAL SECTION NEGOTIATION PROCEDURE	
1	Carry out the normal train operation for negotiation of neutral section.
2	Press NSN switch ("Neutral section" push button switch) provided on DDU, when Driving loco approaches 500 meter board.
3	Open the VCB at Open Board & Close VCB at Close Board.
4	The remote locomotive will open its VCB before the open board and close after the VCB close board automatically. Relevant message will be displayed on DDU for Loco pilot.

NOTE:

- I) The guard will be in rear of the rear most vehicle, whether the brake van or locomotive.
- II) Ensure release of BC pressure of both locos before movement.
- III) If direction of movement is to be reversed, first ungroup the formation, then do fresh configuration and regrouping.
- IV) If system malfunctions, switch off MCBs of both locos and work independently.
- V) The remote loco will be manned by a single crew (LP/ALP) to manually take care of any unusual incident in this loco, till further advice.
- VI) Train parting - remote loco goes to idle mode and system automatically ungroup. Loco will have to be grouped again after amalgamation of train.
- VII) **Never** drive from rear cab.

(E) Special features in LOTUS wireless Technologies India Pvt Ltd.	
'Reboot' option is provided on DDU. If LP wants to 'Reboot' the 'Electronics in 'Remote 'loco. a) Select option 'Reboot' and 'Confirm' for 'Remote' Locomotive. b) System rebooting starts, Node progressing will be done automatically. Remote locomotive will automatically be synchronized with lead locomotive. Note: Rebooting is require to synchronized if ' Regrouping' required after 'UP grouping' disconnected for signal failure, Loco failure etc and DATA is already saved in both locomotives.	
<u>MODES OF OPERATION</u>	
1. SYNCHRONISING MODE 2. IDLE MODE 3. ISOLATE MODE 4. INDEPENDENT CONTROL 5. BRAKE MODE Initially the system will be in 'Synchronizing mode' to run locomotive in other mode as per requirement or choice, LP may select other mode. Press " MODE SELECTION" option on DDU, at bottom 'status Bar' a) Select 'Remote' Loco by using ↑ or ↓ key. b) Select required MODE of Operation by using ↑ or ↓ key.	
<u>SYNCHRONISING MODE:</u>	

The loco is Grouped by using above procedure. 'Traction and Braking' will be controlled from 'Lead Locomotive.

IDLE MODE

In this mode, the system will remain in Grouped but Remote loco will not synchronize.

(Remote locomotive will not participate in Traction Effort or Regenerative Braking, but Remote loco will participate in pneumatic braking).

ISOLATE MODE:

The Remote locomotives will be in 'Grouped' condition but will not be synchronized with leading locomotives. (VCB- opens and Pantographs -Lower)

INDEPENDENT CONTROL MODE

Electrical braking and Traction can be independently control of the remote locomotive through option available on DDU (Loco pilot can increase or decrease the "Traction and 'Regenerative Braking, Raise & Lower Panto , 'Close & Open" VCB from remote locomotive.

BRAKING MODE

The 'Remote 'locomotive will participate in "Pneumatic and Regenerative braking" but "Traction" 'Remote Locomotive will not be synchronized with 'Lead' Locomotives.

Sd/-
(M.S.SANSANWAL)
CELE

EAST COAST RAILWAY

Office of the PCOM
Rail Sadan; Chandrasekharapur,
Bhubaneswar-17
Date: 07 .12.2018

No: ECoR/Optg/SC/55/III/S. Circulars

TRAFFIC SAFETY CIRCULAR NO--04

SUB: Speed limit at different circumstances

The speed limit of trains at different circumstances prescribed in G&SR Book & Operating Manual of East Coast Railway are consolidated and reproduced below in a tabular form. These shall be useful to the field staff while they are on duty. It should be circulated to all stations, crew lobbies, running rooms and other places connected with train operation to keep the knowledge of field staff up to date on prescribed speed limits.

Sl. No	Circumstances	Speed Limit(Maximum)	Rule No.
1	Admission of Passenger carrying trains into a goods yard/ goods loop	10Kmph	SR.3.40.03
2	Testing of Detonators under the wheels of empty wagon	8kmph to 12kmph	SR.3.64.05(b)
3	Passing IB Stop Signal at 'ON' after waiting for 5 minutes in the event of no Telephone or out of order.	15 Kmph=View ahead clear 08 Kmph=View ahead not clear	GR.3.75(3)
4	When Interlocked points go out of order or defective	15 Kmph	SR.3.77.01(b)(ii)
5	Defective Speedometer	10% less than MPS/Booked Speed	GR.4.08(c)
6	During Foggy weather	(a) Absolute Block-75 Kmph (b) <u>Automatic section</u> : (i) 75 Kmph-After passing Green aspect (ii) 30 Kmph-After passing Double Yellow aspect.	SR.4.08.01
7	Speed over non-interlocked facing points	30 Kmph	GR.4.10(1)
8	Speed over turn outs and cross overs at interlocked stations.	(a) 1 in 12 turn outs and cross over=15 Kmph (b) 1 in 12 turn outs and cross over with curved switches=30 Kmph (c) 1 in 8 ^{1/2} turn outs and cross over=10 Kmph (d) 1 in 8 ^{1/2} turn outs and cross overs with curved switch and laid as symmetrical split=30 Kmph	SR.4.10.01 SR.4.10.02
9	Speed of trains over interlocked facing points.	<u>Standard of interlocking</u> : (a) I & I(R)=50 Kmph (b) II=75 Kmph (c)II(R)= upto 110 Kmph	SR.4.11.01

		(d)III=MPS (e)III(R)= upto140 Kmph IV(R)=upto 160 Kmph	
10	Engine or self-propelled vehicle pushing train outside station limit.	25 Kmph	GR.4.12(1)
11	A "Patrol" or "Search light" special pushing one or more vehicle outside station limit.	40 Kmph	GR.4.12(2)
12	Defective Electric head light in the section provided with reflective type engineering fixed signal	40Kmph or severest speed restriction in the block section whichever is less.	GR.4.14(5)
13	Head light goes out of order after leaving engine/crew changing station.	20 Kmph during thick, foggy, tempestuous weather and inside tunnels with continuous whistle.	SR.4.14.01(c)(i)
14	Driving of train to next station by Assistant Loco Pilot when Loco Pilot becomes incapacitated.	25Kmph	SR.4.20.01(a)
15	Driving of a train from trailing driving compartment of an electric engine.	40 Kmph	SR.4.21.01(b)(i)
16	Horn/Whistle of the driving cabs becomes defective	40 Kmph	SR.4.21.01(d)
17	When a crane is attached to a train	(i) 40 kmph- Straight line (ii) 15kmph- Over Turnout	SR.4.27.03
18	First brake feel test	20-25 Kmph	SR.4.31.04(a)
19	Second brake feel test	45-50Kmph	SR.4.31.04(b)
20	Material train working between stations	25 Kmph	SR.4.62.06(a)
21	Material train working between stations during integrated block	(i) 15Kmph- During day and on straight (ii) 10 Kmph -At night and when clear view ahead is restricted to 800 meters	SR.4.62.06(b)
22	Material train working between stations with engine pushing or in the middle	(i) 25Kmph on straight line (ii) 08 kmph over turnouts	SR.4.62.06(d)(i)
23	Material train working between stations with engine pushing or in the middle and brakevan is not leading.	08 Kmph	SR.4.62.06(e)(i)
24	During shunting	15 Kmph	GR.5.13(3)
25	Shunting of vehicles loaded with K.Oil, Liquid fuel, spirit and highly inflammable liquid.	08 Kmph	SR.5.14.06(c)(i)
26	Impact speed of all bogie wagons when shunting a single wagon with roller bearing.	05 kmph	SR.5.14.06(c)(ii)
27	Impact speed when shunting a group of five bogie wagons with roller bearing and transition coupling.	03 Kmph	SR.5.14.06(c)(iii)
28	Hand shunting at stations other than	05 Kmph	SR.5.20.01(a)(iii)

	steep gradient		
29	TSL working on double line section	25 Kmph=First train on TSL working.	SR.6.02.01(11)
30	Total interruption of communication on double line	(i) 25 Kmph over the straight (ii) 10 Kmph when view ahead is not clear	SR.6.02.03(3)(b)
31	Proceed on "Authority for opening communication during total interruption communication on single line".	(i) 15 Kmph during day (ii) 10 Kmph during night or when view ahead is not clear or obstructed.	SR.6.02.04(6)(a)
32	Second and subsequent following train when line clear has obtained during total interruption of communication on single line section	(i) 25 Kmph over the straight/view ahead is clear. (ii) 10 Kmph during night or when view ahead is not clear due to curve, obstruction, rain, fog or any other cause.	SR.6.02.04(18)
33	Speed of the train running on authority of (T/A 602 or T/C 912).	(i) 15 Kmph-Day light hours (ii) 10 Kmph at night or when view for 800 meters is not clear.	SR.6.02.05(a)(ii)
34	Speed of a train which following a train already run on T/A 602 or T/C 912.	08 Kmph	SR.6.02.05(d)(b)(ii) i)
35	Speed of goods train/engine allowed against normal direction of traffic on double line without TSL working.	(i) 15 Kmph-Day light hours (ii) 10 Kmph at night or when view for 800 meters is not clear.	SR.6.02.05(g)(b)(ii) i)
36	Loco Pilot after satisfying himself about the condition of the track (In absence of engineering official) which is reported to be abnormal for safe running of trains.	10 Kmph	SR.6.07.01(e)
37	Passing Automatic Signal at 'ON'. When line ahead cannot be seen clearly due to fog, rain or dust storm or engine pushing or other cause.	10 Kmph	GR.9.02(3) GR.9.07(5)
38	First train running during failure of all or series of signals in the Automatic Section when communications are available.	25 Kmph	SR.9.12.01(g)(i)
39	Train running during failure of all signals in the Automatic Section when communications are not available.	(i) 25 Kmph over straight. (ii) 10 Kmph when view ahead is not clear due to tunnel, curve, obstacle, rain, fog, dust storm or for any other cause.	SR.9.12.02(3)
40	First train running on TSL working in Automatic section .	25 Kmph	SR.9.12.03(m)
41	First train running on single line Automatic Section when direction of traffic cannot be established but line clear can be obtain.	25 Kmph	SR.9.12.07(d)(iii)
42	All trains following the first train in	25 Kmph except under special	GR.10.03(e)

	the "Following Trains System of Working".	instructions.	
43	All trains running under "The Pilot Guard System Working".	25 Kmph except under special instructions.	GR.11.02(b)
44	All trains running under "The Train Staff and Ticket System."	25 Kmph except under special instructions.	GR.12.03(b)
45	Speed restriction of trains when Patrol man does not turn up within 15 minutes of his schedule arrival.	(i) 40 Kmph during day when visibility is clear. (ii) 15 kmph during night or when visibility is not clear.	SR.15.05.10(c).
46	Speed of trains when allowed by P.Way supervisor/Gang Mate/ Key man in case of a rail fracture of less serious nature.	(i) 10 kmph- First Train (ii) 20 Kmph Subsequent trains.	SR.15.17.02(a)
47	Speed of trains after inserting a rail closure of length shorter than 5.5 m in a running track.	15 kmph	SR.15.17.04
48	Speed of Motor Trolley at night	30 Kmph	SR.15.25.03(a)(ii)
49	Speed of Motor Trolley over points & crossings	15 Kmph	SR.15.25.04(a)
50	Speed of Light Motor Trolley	20 Kmph both during day & night	SR.15.25.09(b)
51	Speed of lorry	10 Kmph	SR.15.27.03
52	Speed of a goods train when a 04 wheeler tower wagon attached to it.	40 Kmph	SR.17.08.03
53	Speed of first train allowed in the section in which healthy OHE is temporarily isolated.	35 kmph-Day 20 Kmph-Night	SR.17.09.01(2)(ii)(a)
54	Speed of train when received from a line not opened for traffic	15 Kmph	OM.3.22.(C) (b)(ii)
55	Speed over in motion weigh bridge	Less than 15 kmph	OM.07.21
56	Speed of ODC	'C' class-25 Kmph, 08 Kmph while passing stations, yards, curves, gradients and turn out and when net clearance is less than 15.24 Cm but more than 7.62 Cm.	OM.8.08 OM.8.14(c)(iv)& (v)
		'B' Class-40 Kmph 15 Kmph while passing stations, yards, curves, gradients and turn outs.	OM.8.08 Om.8.14(b)iv)
		'A' Class- Sectional speed	OM.8.08
57	Speed over points & crossings during Non-Interlocking working	15 Kmph	OM.14.21(1)
58	Speed of locomotives when haul track machine(s) during failure.	15 kmph on straight 10 Kmph on curves	OM.20.11.(c)
59	Crane working in adjacent line	15 Kmph	OM. 24.14(b) OM. 24.16(e)
60	In case a train to run non-air braked in emergency	Passenger trains-40 Kmph Goods Train-25 Kmph	OM.32.16(b)

Note: The above speed limits are subject to imposition of any other lower speed restriction in the section.

Sd/-

(Dibbanjan Roy)
Chief Passenger Transportation Manager

Copy to:

- i. Secy.to GM for information of GM please.
- ii. PS(Gaz) to AGM for information of AGM please.
- iii. PCOM, PCE, PCEE, PCME, PCSTE for information please.
- iv. Sr.DOMs/KUR, WAT & SBP for circulation among Stations, Crew lobbies, Running rooms etc.

B. SAFETY DRIVE:

EAST COAST RAILWAY

Office of the
Principal Chief Safety Officer
Bhubaneswar

No:- ECoR/SFY/Drive/31/

Date: 14.03.2022

To

The Divisional Railway Managers
East Coast Railway,
KUR / SBP/ WAT

Sub: 03 months long Safety Drive on "Summer Precautions".

As Summer season is about to start, 03 months long safety drive on "Summer Precautions" may be launched with effect from date 15.03.2022 to date 14.06.2022 for safe running of train involving Officers & Supervisors of all departments & of all grades.

During the drive period emphasis should be given on the following items:

1. Availability of adequate no of live detonators.
2. Availability & satisfactory working of thermometers including CRT for regular recording of temperature.
3. Destressing of LWR before onset of Summer. Priority should be given to those LWRs, where Low temperature destressing were undertaken earlier.
4. Adjustment of SEJ gap where the gap expected to be jammed during summer.
5. Conducting of Gap survey & its adjustment as per IRPWM-2020 item no-320&321.
6. Attention of loose packing locations.
7. Protection of trespassing locations & recouplement of ballast at the said locations, if required.
8. Recouplement of ballast at deficient ballast locations & proper dressing.
9. Examination of Knowledge of LPs & ALPs on behavior of track prior to buckling.
10. Nomination and training of patrol men during Summer for Hot weather patrolling & counseling of Keymen.
11. Protection rules when the track is buckled & expected to buckle.
12. Inspection arrangements during peak hours of summer to monitor Patrolling.
13. Proper greasing of SEJs/ Buffer rails as per schedule.
14. Special attention to SEJs/ Buffer rails at bridge & yard approaches.
15. Regular track maintenance in LWR/CWR to be done as per the provisions in para no-345 of IRPWM-2020.

During drive period item-wise interim reports on deficiencies noticed and remedial action taken should be sent to this office on 30.04.2022& 31.05.2022.

Sd/-

Principal Chief Safety Officer
Bhubaneswar

Copy:

1. Secy. to GM for kind information of GM
2. Secy. to AGM for kind information of AGM
3. PCE, PCOM, PCSTE, PCEE, PCME, PCCM & CPRO for information and necessary action
4. Sr.DSO/KUR, WAT & SBP for information and necessary action.

EAST COAST RAILWAY

Office of the
Pr. Chief Safety Officer
Bhubaneswar
Date:-24.03.2022

No:-ECoR/SFY/1476

To
The Pr. Chief Commercial Manager,
East Coast Railway,
Bhubaneswar.

Sub: - Covering of loaded open wagons with tarpaulin.

In the recent past quite a few incidents have happened in which tarpaulins covering loaded wagons have got entangled with OHE, with bearing of wheels and even the couplings to cause unsafe situations. This has also affected mobility by causing detentions.

There is need to have a specification to cover loaded open wagons. It seems there is none on date. The consigners are covering the loaded wagons with polythene sheets and hooking the borders of the polythene sheets to the body of the wagon. During run, the polythene sheets catch wind and get free, leading to entanglement with OHE an different parts of the wagon heading unsafe condition. In the absence of any specification for covering loaded open wagons, the following is advised for immediate implementation till suitable specifications are framed by the competent authority.

- 1) The rope hooking tarpaulin to the body of the wagons should be reasonably strong. Jute, coir or plastic ropes of minimum 5mm thickness should be used.
- 2) After anchoring the tarpaulin to the body of the wagon, a rope should be tied over the tarpaulin being anchored at both ends to the body of the wagon. Such arrangement should be done at minimum 2mtr interval. This is something similar to the arrangements done to cover a loaded lorry(photo enclosed)

Action taken may be advised.

(H.K. Dutta)
PCSO/ECoR

Copy:- 1) PCEE & PCME for information.
2)DRM-KUR,SBP &WAT –for information and necessary action.

पूर्व तट रेलवे
East Coast Railway

कार्यालय/Office

प्रधान मुख्य संरक्षा अधिकारी/PCSO
चन्द्रशेखरपुर, भुवनेश्वर-17/CSPur, BBS

पत्र संख्या - ECoR/SFY/S&T Policy/ 1468

दिनांक - 23.03.2022

मंडल रेल प्रबंधक/DRMs,
पूर्व तट रेलवे/E.Co.Railway,
खोरधा, वाल्टियर, संबलपुर/KUR, WAT & SBP

विषय/Sub: Cable cut cases leading to failure of signals for long duration.

A copy of cases of cable cut, cable theft and cable fault leading to failure during first 20 days of the current month is enclosed. It is seen that there have been total 20 (twenty) such cases with average duration of failure being 5:27 hrs. Such long duration failure not only lead to unsafe condition but also affects mobility. Moreover, most of these cases could have been avoided if laid down guidelines were followed. In view of the above, the following is advised to ensure that failures on account of cable cut, cable failure and cable theft are minimised: -

- 1) Monthly by foot checking of cables shall be ensured by signal and telecom maintainer. Such checking should be properly documented.
- 2) Cable laying plan must be available at station yards and other places of train operation. If cable plans are not available, they should be prepared to the scale within next one month. Cable plan should be referred to while giving marking for new work involving trenching or while planning new work so that such works do not need any trenching near cable path.

- 3) While allowing trenching in station area, marking should be given by the concerned S&T supervisor after referring to the cable plan and by using cable locator. Trenching should be allowed only when written memo is received from the executing agency that cable route is clearly understood by them. Preferably manual digging should be done where cable is too close to the area needing excavation.
- 4) Cases of unauthorized digging by railway contractors/outsideers must be dealt with firmly.
- 5) Cable joint should always be above the earth through junction boxes. Joints which are under the earth should be brought above earth in a planned manner.
- 6) Periodic meggering of cables must be ensured and documented as per the laid down instructions.
- 7) Theft prone areas to be patrolled intensively. Theft cases should be taken to the logical conclusion by apprehending the culprit.

Encl: As above

हेमन्त कुमार दत्त/H.K. Dutta
प्रधान मुख्य संरक्षा अधिकारी/PCSO
पूर्व तट रेलवे, भुवनेश्वर/ECOR/BBS

प्रतिलिपि/Copy to: 1) Secretary to GM - for kind information of GM.
2) PCSTE, PCSC, PCEE, PCE and CAO/Con- For information.

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

No. 2015/CE-II/TK/14

New Delhi Dated: 14.03.2022

16 → Principal Chief Engineers
All Zonal Railways

Sub: Safety of Railway staff.

Incidences of run over cases of Railway staff while working on track have been reported over Zonal Railways. Instructions on ensuring safety at worksites have been issued to Zonal Railways from time to time. The same are reiterated as under:

1. Protection of work sites must be rechecked for correct locations of caution boards, flagmen etc.
2. Attempt should be made to open less number of sites and progress work by pooling of resources.
3. Maintenance work on track to be done only after ensuring proper protection of track/worksites as per laid down instructions. Wherever required, a staff should be posted for lookout duty.
4. No supervisor or staff should be forced to do maintenance work without protection of track/worksites.
5. No harassment of staff or supervisor for putting banner flag for safety reasons.
6. Full supply of safety gears to staff working on track should be ensured.
7. VHF based approaching train warning system (RAKSHAK) should be commissioned and provided to P. Way gangs, for advance warning of approaching trains.
8. Regular counseling of staff regarding personal safety should be done involving supervisors and officers. Knowledge of staff regarding safety precautions to be checked during regular inspections.
9. Violations, if any, should be monitored and severe action should be taken against defaulters.

Zonal Railways are requested to follow the above in true spirit. Action taken on above may be advised to Board at the earliest.

c/c
14.03.2022

14.03.22

(Pradeep Nagar)
Director Civil Engg. (Plg.)
Railway Board

Analysis on Dual/HASSDAC system for increasing RAMS

By

Prabhat Kumar, SSO(S&T) and T.K Jena, SC (S&T)

Introduction- Prior to introduction of axle counter system in Indian railways the verification of intactness of train used to be done manually by SM and token porter. Since, the verification was done manually; there was a high probability of human error especially for the through train. To avoid manual verification and increase reliability of the system, axle counter system was introduced. Axle counter plays a vital role in detection of complete arrival of train proving intactness of train. However, failure of axle counter paralyzes movement of traffic affecting the punctuality of trains and creating unsafe conditions.

Failures and bypassing of LVCD- In ECoR, a JPO on “**Block working in event of critical failure of LVCD axle counter**” for working of train is in force since 1.12.2014. In the event of failure of an axle counter, as per JPO, the station master can resume block working without axle counter with the consent of station masters of adjacent stations by exchanging private number after receiving written memo from Signal maintainer. Though block resumes by bypassing LVCD, safety is compromised and it is dangerous! Therefore, prompt and early rectification needs to be ensured.

Dual/HASSDAC system- With an aim to enhance availability, reliability and safety of the system, HASSDAC/Dual System was developed. Advantage of HASSDAC/ DUAL SSDAC over SSDAC is redundancy provided at every level i.e. power supply, media, cables, cards etc and auto resetting facility.

In East coast Railway HASSDAC of two different makes are used. First one is of GGTronics make and the other is of CEL make. For dual SSDAC system CEL, GGtronics and Medha make system are in use. Out of 331, 221 block sections in East Coast Railway are provided with Dual/HASSDAC amounting to 408 sets of Dual/HASSDAC system.

Benefit of Dual/HASSDAC system- With the advent of Dual/HASSDAC System, reported numbers of failures of axle counter have been reduced to **405 cases in 2021-2022 compared to 837 cases in 2019-2020**. This is the strength of dual/HASSDAC system.

Failures in Dual/HASSDAC system- Number of reported cases of failures of HASSDAC system is also unexpectedly high. There have been **185 cases** of failure of dual/HASSDAC system in 2021-2022. Detailed analysis of failures is given below in tabular form.

S.No	Cause of failure	Nos of failure
1	Cable cut	14
2	Cable fault	7
3	System defects	13
4	Lightening	21
5	Power supply	02
6	Reset and resume	97
7	Telecom equipments	12
8	Others	19
Figures are indicative.		

Above figure indicates that dual system is failing for a single cause which further indicates that redundancy is not provided at all level. Some of the reasons are:

1. Total 147 sets of Dual/HASSDAC system in East Coast Railway are not provided with media redundancy i.e. they are either working on QUAD or OFC. QUAD/OFC/Telecom equipments are not available.
2. Power segregation is not there for redundant channel. DC-DC converter modules are not available in the IPS. Two separate power cables are not available.
3. Though VRs are monitored by the data loggers, exception reports/messages are not generated in the event of failure of one channel.
4. Proper Earthing system is missing for the system and JB's.

Conclusions- Axle counters have played a vital role in operations and enhancing safety in Indian Railways. With the advent of HASSDAC/Dual system cases of failure have been reduced significantly. However, the cases of failure in Dual/HASSDAC system are quite alarming and unexpected. Redundancy needs to be provided at every level so that full potential of Dual/HASSDAC system is realised.

A. Brochure for counselling of S&T staff regarding interlocked LC gates.

1. All moving parts shall be properly lubricated. Cleaning of all pipes and ducts to prevent obstruction by accumulation of dirt shall be ensured.
2. Integrity of interlocking and positive boom locking shall be checked.
3. Proper working of audio/visual warning shall be ensured.
4. Machines must be kept in good condition, free from rust, dust and dirt.
5. The shock absorber at the boom rest (stop post) must be kept properly adjusted.
6. The satisfactory functioning of the electrical lifting barrier by a hand crank shall be checked.
7. Approach warning arrangement where provided, is working satisfactorily and effectiveness of Approach and Back locking provided shall be ensured.
8. Communication of approved type is provided between Level Crossing gates and the adjoining stations shall be checked in regard to their satisfactory functioning.
9. Heavy repairs, renewals or alterations to gate interlocking must not be carried out until Jr. Engineer/Sr. Section Engineer (Signal) concerned has arranged for the protection of the road traffic by the concerned department and the work shall be carried out under proper disconnection.
10. Proper working of power supplies/auto changeover shall be checked and in case of any discrepancies, the same should be immediately informed to their electrical counterpart.
11. It is to be ensured that proper approach road, humps, height gauge etc are maintained properly and in case of any discrepancies, the same should be immediately informed to their electrical counterpart.
12. The height of the gate boom should be between 0.8 to 1m.
13. The boom rest (stop post) shall be in alignment with the boom. The open position of the lifting barrier shall be within 80° to 90° from the horizontal and the closed position shall be within 0° to 10° from the horizontal.
14. It is to be ensured the gate slot is free so that slot can be normalised incase of emergency/obstruction and signal can be put back to 'ON' position.
15. The record of use of emergency key shall be maintained with proper reason.

B. Brochure on cable cut cases and counseling of S&T staff on avoiding cable cut:

1. Before taking up any digging/Earth work/RE Mast foundation in vicinity of the cable, the executing agency must give written memo to their counterpart S&T railway staff well in advance for clearance.
2. On receiving the written memo, the counterpart S&T staff shall prepare detailed cable route plan showing exact location of cable at the interval of 200 meters or wherever change in alignment.
3. The cable route plan shall be prepared/verified if already available with route tracer etc taking due consideration of newly laid cable if any, etc with the help of open line staff (S&T). The depth should also be verified.
4. The cable route plan shall be provided to the concern department and its executing agency.
5. A joint survey of the cable route should be done with executing department and counterpart S&T staff.
6. A written memo to be received from the railway supervisor of executing department and supervisor of executing agency that cable route is clearly understood by them.
7. After receiving the memo, the work of digging may be allowed by taking the open line S&T staff into confidence.
8. The digging work is to be carried in the presence of S&T staff.
9. Despite of following the due procedure, if any cable gets damaged or cut, S&T staff should be immediately informed. S&T staff should immediately arrange for the rectification so that normal traffic is restored.
10. The joint report should be prepared and responsibility should be fixed. No FIR to be launched, in case, the work is being done following the due procedure.
11. The maintainer shall be vigilant towards any activities near cable route, vulnerable locations during their periodical checks such as EC socket testing etc.
12. Any unauthorized activities such as digging, burning etc in the vicinity of S&T cable should be immediately stopped and FIR should be lodged with RPF.
13. Checking of exposed cable in earth, bridges, duct, Platform, pipe etc. Exposed cable shall be buried or protected by concreting. Ends of pipe must be concreted.
14. Cable entry point at relay room, goomties, location boxes should be protected

- by GI pipes or concrete bricks.
15. Permanent concrete post cable route marker should be fixed wherever it is feasible.
 16. Manual trenching /digging shall be preferred to avoid cable cut/damage issues in the station yard/section.
 17. Before back filling, laid cable should be covered by split pipe.

C. Brochure on handing over & taking over of charge by Station Master:

1. Name of staff along with duration of duty hours at station, Cabin, L.C. Gates (including engineering gates) under his control & the section controller as well.
2. Condition of Signal(s)/Point(s)/Track circuit(s) including disconnection memo issued by S & T and Engg & Power / Traffic blocks allowed if any.
3. Condition of running/non running lines with respect to S&T, P.Way and OHE.
4. Occupation of block section, if any.
5. Position of reception/departure lines.
6. Yard position (including placement particulars where required, ongoing shunting movements if any etc...)
7. Condition of all the means of Telecommunications (Functioning Block telephone, Control phone, TPC phone, adjacent station telephone, Gate telephone, Railway telephone number system, BSNL phone, CUG)
8. Caution order serial No. in force after physical verification from the urgent order book.
9. Digital numbers displayed at various veedor counters after physical verification from the concerned register and veedor counter. Voltage of ASM panel box to be recorded.
10. Possession of safety keys such as relay room, block instrument and isolator keys etc..
11. Functional status of Block instrument.
12. Availability of books & forms.
13. Availability of essential safety equipments in working order as per SWR and deficiency if any.
14. Availability of power supply in different modes as provided.
15. Number of ID sheets available with adjacent block stations.
16. Cash on hand/ticket tube.
17. If any train gets detained for more than one hour beyond the normal running time in block section due to an accident or for any other exceptional reasons, then Station Master may sign 'off' after maintaining the detailed particulars of the detained train in red ink and signed jointly by the Station Master who goes off duty and the Station Master who relieves him.
18. Recording particulars of shunt movement and movements in the yard.
19. Securing & Stabling particulars of vehicles in running as well as non-running lines.

20. Important control order number & messages etc... to be carried out if any.
21. Unusual occurrence/accidents, Defect in Signals, Interlocking gears, points, Track circuits level crossing etc., if any and arrangements pertaining thereto (Mention in red ink).
22. Movement of trolley/lorry on line/tower wagons etc.. if any.
23. Station clock checked with control at 16.00. Also note the time indicated by station clock when the standard time signaled at 16.00 hours.
24. Weather condition-indicating cloudy, rainy, foggy, tempestuous, etc... (also indicate whether any weather warning is received).
25. Whether line patrolling is in force, if so, furnish the arrival and departure timings of patrolman.
26. Last HQ and divisional safety circulars received.
27. PN book with last PN used by the reliever & to whom given with purpose.
28. Visits/inspections of Officers and Inspecting Officials at stations with time.
29. Signature of the SM on duty handing and taking over with time.