Accident-I

Rear-Collision of Goods Train No. N/NPSB with Goods Train No. BOBRN/BRS, on the UP Line of Singhpur Station in Anuppur-Katni section of Bilaspur Division, South East Central Railway at about 06:40 hrs. on 19.04.2023.

I. Cause of the Accident

The accident occurred due the act of Signal Passing At Danger (SPAD) caused by complete disregard to the extant rule.

II. Remarks and Recommendations

Remarks and recommendations made by commissioner of Railway Safety and action taken by railways are given below-

S.No.	Recommendation	Action Taken by Railways
1	The occurrence of as many as 120 cases of Signal Passing At Danger from 01.04.2020 to 30.06.2023 highlights the limitations of preventive measures taken by the Zonal Railways (counselling of LP/ALP, safety drives, etc.). The accident underscores the need for an automatic train protection system that can prevent collisions.	1. Indian Railways has already started deploying indigenously developed Automatic Train Protection (ATP) system i.e. KAVACH. 2. The first field trials on the passenger trains were started in February 2016. Based on the experience so gained and Independent Safety Assessment of the system by a 3rd party (Independent Safety Assessor: ISA) three firms were approved in 2018-19, for supply of KAVACH. 3. Subsequently KAVACH was adopted as National ATP system in July 2020. 4. KAVACH has so far been deployed on 1465 Route Kms and 139 Locomotives (Including EMU rakes) over South Central Railway. 5. KAVACH Tenders have been awarded for Delhi-Howrah and Delhi-Mumbai Routes

		(approximately 3000 Route kms.) and work is in progress.
2	Control Office Application should get an input from Crew Management System about crew-sign-on particulars so that a section controller is aware of crew working for longer hours.	In the Control Office Application, Train Name, Crew Name, Crew Type, Sign On time, Crew duty hours, Crew HQ, Sign ON Station & CMS user ID of crew due for change & crew about to change is visible to the controller in real time. The window is called "Alert Crew Duty Hours". Screen shots of COA window are enclosed as Annexure-II. Further a JPO framed by Electrical & Operating departments of SECR has been issued on 06.04.2023 (Copy enclosed as Annexure-III) for conveying train ordering through CMS/FOIS to the lobbies. This will enable the Crew Controller at lobbies, TLC at Control to monitor Crew long hours effectively. They in turn will inform Section Controller/Dy Controller of long hours for better crew management/planning .
3	The unabated cases of SPAD highlight the importance of Isolation in signaling. The recent changes in the provisions of GR 5.16, and GR 3.47 which allows non-isolated shunting, and non-isolated simultaneous movements ahead of a train being received on a main line do not bode well for IR, and should be reviewed.	This issue has already been reviewed by Board in response to reference received from CCRS office under Letter No. M-15013/01/2017-18-TW dated 04.09.2023. The reply of the reference has been sent under Boards Letter No 2021/safety (A&R)/19/49 dated 16.10.23. (Copy enclosed as Annexure-IV)
4	There is an urgent need for robust Crew management in SECR filling of vacancies, timely crew-reviews, and monitoring of crew working longer hours should be done in earnest.	Chapter V of ACTM, para 30504 details the duties of TLC. The duties include: • to watch the detention to electric locos as well as electrical running staff in yards and sections and take remedial action in coordination with the Traffic Controller;

		• to watch train operation in order to avoid excessive waiting duty for running staff and take remedial action, as required in coordination with the Traffic Controller; • to study cases of running staff performing more than the prescribed hours of duty at a stretch and take necessary remedial action to avoid recurrence; Further to the above, necessary steps have been taken over SECR to strengthen Crew Management. Some of the major steps taken are as follows: 1. Crew review for the year 2022-23 has been sanctioned on 14.06.23. Indent for 3937 staff has been placed on the portal. 2. Stipulated rest to Loco Pilots and Assistant Loco Pilots at Head Quarter and outstations is being monitored. 3. No LP/ALP is booked in Breach of Rest either from HQ or from outstations (Running Rooms). 4. During 2022-23 & 2023-24, 623 &180 (Total-803) no. of ALPs have been promoted to Loco Pilot Goods. Also, 1309 ALPs were inducted during 2022-23. 5. New Lobbies have been set up at Uslapur & Pendra Stations in BSP-SDL Section to relieve crew before exceeding the stipulated working hours.

		6. Regular monitoring of long hours cases is being done at various levels including weekly safety meeting chaired by GM.
5	The long-haul operation in SECR should be reviewed; an operation without a proper JSC and without longer loops in the stations does not seem proper.	At present long haul operation is being done as per Board's guidelines issued under letter No-2022/TT-1/27/1 dated 04.08.2023. (Copy enclosed as Annexure-V) Following stations on SECR have long Loop Lines: a) Hathbandh station of Raipur Division in Bilaspur Raipur section. b) Koka Station of Nagpur Division in Gondia Nagpur section. Long Loops are in the pipeline at the Following stations of SECR: a) Madarwani Station & b) Kirodimalnagar Station of Bilaspur Division. Long loops are not feasible at many yards due to grade constraints especially over Zonal Railways such as SECR, SER, WCR, ECOR etc. Long hauls are being formed and run successfully on running lines (2nd/3rd/4th lines) on many Zonal Railways such as SECR, SER, WCR, ECOR etc. It is pertinent to mention that Long Haulsare actually a means to reduce congestion as it facilitates more number of trains on available paths, which not only improves throughput but also reduces congestion. This helps in improving speed and ultimately in reducing long hours cases.

Accident-II

Incident of Entanglement of Pantograph of Locomotive No. WAP7-37336/GZB of Train No. 12801 (Puri-New Delhi Purushottam Express) near Parsabad Station in Gomoh-Gaya Section of Dhanbad Division of East Central Railway at about 12:05 hrs. on 11.11.2023.

I. Cause of the Accident

Due to sudden snapping of out-of-run contact wire near OHE Mast No. 366/13. The cause of the accident is attributed to and classified as - "Failure of Equipment (OHE)".

II. Remarks and Recommendations

Remarks and recommendations made by commissioner of Railway Safety and action taken by railways are given below-

S.No.	Recommendation	Action Taken by Railways
1	As part of regular maintenance, a Flaw Detection Mechanism (as is being done for Rails by Ultrasonic Flaw Detectors) may be adopted for periodic checking of the OHE wires.	i. CCR rod of 19.6 mm dia is manufactured by hot rolling of cast bar of higher size (3800 sqmm). This eliminates the possibility of casting defects such as pin hole/blow holes due to size reduction. Further, to check any residual defects, the rod is passed through eddy current test continuously during final stage of manufacturing of CCR Rod. If any defects are found during eddy current testing stage checking, the CCR rod is rejected. ii. In addition, the CCR Rod at Contact wire manufacturer premise is checked at Input Stage using USFD for detection of any blow hole/pin hole. iii. Adopting USFD technique for checking of contact wire is not feasible as long duration power block shall be required

		iv.	for effective flaw detection. Further, detection of all defects of this type may still not be technically possible being close to the termination. In this regard, RDSO has been advised to examine for further options.
2	Dedicated Field Level and Officer Level supervision is required during execution of technical works associated with modification of the existing system of working of the Railway. Installation/maintenance of OHE wires may be closely monitored to avoid any improper bending at end cone of insulators which might lead to damage of wire/development of stress concentration in the long run.		There has been a practice in Railways to depute Railway Official for supervision/inspection during execution of technical works associated with modification of the existing system (TRD). Monitoring of OHE works is being undertaken at the time of execution. Accordingly, advisory has been issued to Railways vide letter dtd. 28.03.2024.
3	Voice-Logger equipment should be installed in the Locomotive Cab to capture the conversation of the Locomotive Crew before, during & after any Accident/Incident and networked to Central Control/Data Logger System from where it can be retrieved.		CRIS has been entrusted for provisioning of Crew Voice Video Recording system (CVVRS) device on locomotives for recording the voice of loco crew along with video of cab, including the cameras on the roof for recording of pantograph related events.
4	A camera may be installed to capture the Pantograph behavior with respect to OHE which may be networked to the Central Control Equipment.		
5	Railway may examine the reduction in Pantograph lowering time. Auto Drop		i. Currently approx. 3000 HRPT on Locos are with ADD & ORD features.

	Device (ADD) was by-passed in the instant Locomotive with High Rise Pantograph. This should be kept in working condition to automatically lower the Pantograph in case of any abnormality in its behavior to prevent its damage and subsequent consequences. Even for other type of Locomotives also, this system should be adopted.	However, there have been many failures due to malfunctioning of ADD & its associated components which has affected the reliability of locos, because of which many sheds have isolated these features. Subsequently based on discussion with Zonal Railways, these features were deleted in revised specification dated 27.09.2022. ii. With regard to requirement of ADD system in the pantographs, the reference standard relevant clause no 8.1 of EN:50367-2020 is as under and the requirement of ADD system is mandated for speed more than 160 km/h. a) Traction units designed for a speed higher than 160 km/h shall be equipped with an automatic dropping device in accordance with EN 50206-1 2010, 4.8. b) Traction units configured as trains that require more than one pantograph raised in operation and of maximum design speed higher than 120 km/h shall be equipped with automatic dropping devices in accordance with EN 50206-1:2010, 4.8
6	Railway should ensure that their officials reach the site Accident/Incident at the	Railway Officials reach the accident/incident site as soon as possible by the first

	earliest by quickest means available.	available means of transport with the medical teams, ambulance services, accident relief medical equipment van including first aid boxes, to give prompt relief to passengers injured railway accidents. In this regard, a fresh advisory has been issued to Railways vide letter dtd. 28.03.2024.

Accident –III

Derailment of Goods Train No. E NBOX(E)/CAP on UP Line of Korai Station in Bhadrak - Khurda Road (via Cuttack) section of Khurda Road Division, East Coast Railway at about 06:44 hrs. on 21.11.2022-

I Cause of the Accident

Systemic Failure of Indian Railways in ensuring safe operation of freight Train of BOXN wagons".

II Remarks and Recommendations

Remarks and recommendation maqde by commission of Railway safety and action taken by railways are given below-

S,No.	Recommendation	Action Taken by Railways
1	The instruction issued by Railway Board vide letter no. No.2005/M(N)/951/13 dated 7.4.2006, especially para 7 of the annexure to the letter, should be strictly followed.	Joint instructions, for controlling running of freight trains with Invalid BPC, have been issued by Board on 09.06.23 to a Zonal Railways for strict compliance. Para 1 of Instructions mentions that" No loading shall be done after expiry permissible days (excluding grace period) or kilometer, whichever is earlier, in CC Rakes or after expiry of permissible days (excluding grace period) in premium/special premium rake, as mentioned in the BPC of the respective rake. In case of End to End (ETE) examined takes, second loading is not permiited without examination,"
2	Framing of subsidiary rules in Zonal Railways, to circumvent the Instructions issued by Railway Board, should not be allowed. In this context, SR 4.31.03(8) issued by ECOR, and similar ones by other Zonal Railways, should be withdrawn	Instructions regarding GDR check & Doors working have been issued by Railway board vide letter No. 2018/M(N)/951/34 Pt. dated 23.06 2020 (copy enclosed) SR 4.31.03(8) issued by ECoR is conformity with Railway Board instructions issued under the above mentioned letter.
	The widespread running of BOXN rakes with invalid BPC should be stopped. The stipulated distance (250-300 km) that a freight rake, with invalid BPC, can travel from unloading point to the TXR-examination point, should be strictly followed, otherwise, a speed restriction should be imposed for operation of such rakes beyond this distance.	As mentioned under para 8.3 (i), Joint instructions, for controlling running of freight trains with Invalid BPC, have be issued by Board on 09.06.23 to all Zonal Railways for strict compliance
	Maintenance of BOXN wagons should be done as per the wagon maintenance manual the closing and locking mechanism of the wagon-doors must be functional while issuing BPC for	The instructions for modification of BOXN wagon doors (blocking of two doors in 100% of the fleet and reduction in height of doors in all wagons) have been issued to the Zonal Railways and compliance the same is being closely monitored.

	Premium/CC rakes, man hours and spares required for the purpose should be ensured.	The availability of spares is being regularly monitored. Checking the closure of doors is one of the items of standard checklist for GDR check.
	For preventing damages to wagons at loading and unloading points, the rules should be framed in such a way that they work as a deterrent to the offenders.	A JPO has been issued vide Board letter No 2010/TT-IV/9/1 18.09.15 which contains instruction prevent damages to wagons during loading/unloading, including the aspect joint inspections and levy of penalty Apart from the above vide Letter No 2015/M(N)/951/63 dated 16.03.2023, Board has advised all Zonal Railways to conduct regular inspection of all sidings by Divisional officers on quarterly basis and inspection of at least 10 sidings per quarter by HQ officers with the purpose of preventing wagon damages.
	The coupling of a BOXN wagon should have the anti-climbing Feature to prevent their mounting over each other, and toppling on adjacent tracks/platforms in the event of an accident at high speed.	The matter was referred to RDSO to examine. Vide Board's lettersno. 2022/M(Safety)/7/10/11 dtd 25.05.2023 and (2023/MSafety)/7/6/1 dtd. 07. 11 2023 RDSO had informed vide Letter No. MW/CPL/BG/HT dated 27 12.2023 that they have finalised the specification no WD-01-Modern open Wagons.- 2023 in Oct-23 for modern open wagons .As per Para 3.10 this specification use of couplers with anti-climbing features had been mandated. Since the tender for 10.000 nos of Modern open wagons of the above specification has since been cancelled, RDSO has now started to work on new design of couplers for freight stock having anti climbing features. This exercise is expected to be completed by June-2024
	The Railways should examine restricting the speed of operation of BOXN wagons considering the their havoc caused by derailment at high speeds.	The permissible speeds of BOXN wagons are prescribed by RDSO as 100 kmph (Empty) and 75Kmph (Loaded) Before the accident, the train was moving steadily at speed of 68 kmph Over speeding is not ascertained as the cause of accident. In view of the above. It is felt that restriction of speed of BOXN wagons is not required.
	Though provision of ramp on a high level platform is mandatory as per IRWM chapter-IV Para 411(d)(iv), and note (b) of Para-6 Chapter-Il, Schedule-I of IRSOD, there are as many as 33 high-level platforms (KUR division-26, SBP division-7) in ECOR which have not been provided with ramps at the ends. Railways should ensure provision of ramps on high level platforms.	Noted. Ramp has now been provided at all the 33 stations (26 of Khurda Road division & 7 of Sambalpur Division) of East Coast Railway
	accident has amply demonstrated the perils of locating a level-crossing in between a high-level platform, such	As a short term measure, it has been planned to extend the platform to JJKR end by 200 meters, keeping the level crossing at the end of the

	LCs should be Immediately closed or relocated suitably.	platform ie. BHC end, till elimination of the LC. The LC gate shall be eliminated provision of ROB and providing parallels roads on both sides of the station to connect LC no. 136. Work for Road Over Bridge in lieu of LC No.137 has been sanctioned on a 50:50 cost sharing basis with the State Govt. of Odisha in the year 2020-21 Umbrella work 2020-21 Railway portion of the work is being executed by Railways & approach portion is being executed by State Govt. Span arrangement in railway portion has been submitted to State Govt. for join approval of GAD. Further, all Zonal Railways have advised to identify such level Crossing (LC) gates and prepare action plan for removal of these LC gates, vide letter no. 2024/CE-IV/Misc.01 dated 02.02.2004