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दिनांक 13.08.2014

मुख्य यांत्रिक अभियन्ता,

1. मध्य रेलवे, छत्रपति शिवाजी टर्मिनस, मुम्बई- 400 001.
2. पूर्व रेलवे, फेयरली प्लेस, कोलकाता - 700 001.
3. उत्तर रेलवे, बडौदा हाउस, नई दिल्ली - 110 001.
4. दक्षिण रेलवे, पार्क टाउन, चेन्नई - 600 003.
5. दक्षिण मध्य रेलवे, रेल निलायम, सिकन्दराबाद - 500 071.
6. दक्षिण पूर्व रेलवे, गार्डेन रीच, कोलकाता - 700 043.
7. पूर्वोत्तर रेलवे, गोरखपुर - 273 012.
8. पूर्वोत्तर सीमान्त रेलवे, मालीगाँव, गुवाहाटी - 781 011.
9. पश्चिम रेलवे, चर्चगेट, मुम्बई - 400 020.
10. पूर्व मध्य रेलवे, हाजीपुर - 844 101.
11. पूर्व तटीय रेलवे, बीडीए रेंटल कालोनी, रेलवे काम्प्लेक्स, चन्द्रशेखरपुरा, भुवनेश्वर, उड़ीसा - 751 016.
12. उत्तर मध्य रेलवे, हास्टिंग रोड, इलाहाबाद - 211 001.
13. उत्तर पश्चिम रेलवे, जयपुर - 302 006.
14. दक्षिण पश्चिम रेलवे, हुबली - 580 023.
15. पश्चिम मध्य रेलवे, जबलपुर - 482 001.
16. दक्षिण पूर्व मध्य रेलवे, आर ई आफिस काम्प्लेक्स, बिलासपुर - 495 004.

विषय: Brake binding incidences on ICF coaches over Indian Railways.

सन्दर्भ: Minutes of CME conference held on 01&02.08.2014.

The issue of increased number of cases of Brake binding has been reported in CME conference held on 01 & 02 August 2014 at Chandigarh. In this regard RDSO has already done an Audit of Coaching Depots and Railway Workshops and summary of common lapses on the Part of some of the Coaching Depots and workshops are enlisted here under:

Coaching Depot

- Non-availability of air dryers in compressor line to SCTR/RTR.
- Air line for mobile test rigs and hose pipe testing are rusty (both ID & OD) and it leads to entering of foreign particles in the Air Brake system.
- The pressure gauges for the mobile test rig are not calibrated and being used for several years.
- Auxiliary reservoirs of coaches are not being drained periodically.
- Piston strokes of Brake Cylinders and clearances between brake blocks are not being maintained regularly.
- Hose pipes are not being checked at 10 Kg/cm² air pressure before fitment in IOH.
- The tested DVs which come from workshops are not having closure plugs on the open ports (like inlet, outlet and exhaust).
- Improper storage of rubber items instead of specified storage conditions.
- No clean & dedicated storage place for warranty failed items. They are lying on ground-uncovered resulting into dust, dirt, rain water ingress.

Railway Workshop

- Non-availability of air dryers in air compressor line to DV testing Room.
- No clean/dedicated storage area for all new & old assemblies/parts and they are being stored in uncontrolled environment resulting in dirt and moisture ingress.
- No dust free area for overhauling/assembly of brake equipments other than DV.
- No practice to seal all the open ports like inlet, outlet and exhaust ports of overhauled DV and other brake control equipments.
- Improper storage of rubber items instead of specified storage condition.
- FIFO (First in First out) system for rubber parts is not being followed.
- Unavailability of recommended grease for Brake Cylinders and Distributor Valve.

etc

- Unavailability of recommended torque wrench as per OEM/Camtech maintenance manual.
- Non-cleaning of metallic pipes as well as surface treatment are not being done.
- No phosphating/waxing facilities available for DVs.
- Periodical cleaning/draining of reservoirs in test rigs is not being done.
- Periodical calibration of Test Rigs is not being done.
- Distributor Valves are not being dismantled in the recommended sequence and the parts are not being kept in proper storage.
- No records are being maintained on various problems noticed and the corrective actions initiated to serve as a data bank for future guidance.

Therefore, in order to eliminate the occurrence of brake binding cases, the following may please be ensured by Railways:

A. Instructions to Coaching Depot

1. Air dryer with water & moisture trap in air lines for SCTR/RTR should be ensured in all Depots.
2. Air Dryer fitted to Compressors in Pit lines are to be maintained and checked for proper working on monthly basis.
3. Compressor Reservoirs in Maintenance line should be drained monthly.
4. Pressure Gauges of RTR & SCTR are to be calibrated at regular interval and all chokes provided in test rigs should be checked monthly.
5. Auxiliary Reservoirs of coaches should be drained monthly.
6. Dirt collectors of coaches should be cleaned quarterly.
7. Piston strokes of Brake Cylinders (32mm) and clearances between brake blocks (5-6mm) to be maintained during round trip examination.
8. Leakage in BP & FP in rake/coaches should not be more than prescribed value of 0.2 kg/cm² in one minute.
9. Ensure no leakage in passenger Emergency alarm system of coaches.
10. No leakage in DVs during charging, application and release be permitted on line. DV should be isolated immediately in case of leakage observed on line.
11. DVs should not be mishandled, thrown or dumped one over the other.
12. Ports of all the ready DVs should be blocked/sealed and then DVs should be kept in poly bags/packings at coaching depot.
13. If the release wire is found missing any one of the coaches coming for primary maintenance, the same should be replaced with the standard release wire rope.
14. The Staff should be instructed to ensure that CR is released before loco change and this may be audited at different levels to avoid brake binding (*Instructions for CR Release at the time of change of Loco are already contained in RDSO Report No.MP-Misc-88/99, Rev. 0.01, of Jan 2000*).

B. Instructions to Railway Workshop

1. BP & FP Hose pipes should be tested with 10kg/cm² pressure before fitting in the coaches at the time of POH/IOH (*Instructions were reiterated vide this office letter of even No. dated 18.2.2009*)
2. Low pressure (2 Kg/cm²) air jet facility to clean debris on the air brake equipments & pipes should be available.
3. Cut off angle cock should be overhauled in the coaches at the time of POH (*Instructions are contained in Para 408a of CAMTECH Manual*).
4. Only the specified Grease shall be used for DV overhauling.
5. Proper alignment of Bogie Mounted Brake Cylinders on Bogie frames shall be ensured.

6. All Pressure gauges to be got checked and calibrated periodically and record to be maintained at Railway workshops.
7. All chokes provided in test rigs should be checked periodically and rigs to be calibrated.
8. Installation of air dryer with water & moisture trap in air lines for DV testing rig and SCTR in all Railway workshops.
9. Compressor Reservoirs in Maintenance line should be drained, so as to ensure dried air in line as per instruction no. MP-MI-18.
10. The rubber parts should be stored as per recommended storage conditions in AC rooms.
11. FIFO (first in first out) system should be applied for use of rubber parts.
12. DV repair, assembly and testing room/section has to be made dust proof.
13. Availability of sufficient number of tools/special tools/torque wrench as recommended in OEM/Camtech manual.
14. DV cleaning and dismantling area has to be separated from the final assembly and testing.
15. Phosphating/waxing for DV should be done.
16. Ports of all the ready DVs should be blocked/sealed then these DVs should be kept in poly bags/packing at Railway Workshops.
17. DVs should not be mishandled, thrown or dumped one over the other.
18. All new DVs supplied by firms should be checked 100% in workshops.

C. Instructions to Drivers

1. Drivers may be advised to desist from unwanted interference with A-9 Valve setting once the Power is attached and Air Pressure given through. Drivers shall not bypass the application of Air Dryer during attachment of Engine to avoid purging process under the pretext of minimizing delay.

D. Training

1. Regular training of staff should be organized to identify DV defects like release choke defect, atmospheric Port leak and difference between brake release and CR Release.
2. TXR and other running staff may be educated on importance of air pressure release during engine change-over and reversal of engine at turn-round point to avoid brake binding.
3. Staff may be educated to stop removing release chokes of DV instead of doing proper repair/troubleshooting.

संलग्नक: कुछ नहीं।


(मोहम्मद सायिदुद्दीन)

सं. निदेशक/सवारी डिब्बा निदेशालय

प्रतिलिपी सूचनार्थः

कार्यकारी निदेशक यांत्रिक इंजीनियरिंग/कोचिंग, रेलवे बोर्ड, नई दिल्ली - 110 001

Check List to avoid Brake Binding

SN	Parameters to be checked	Ok/Not Ok/Remarks	Periodicity
1.	All equipment and subassemblies of air brake system are properly positioned on each coach of the rake		Round trip Note: 1. Audit on monthly basis by CDO(C&W) 2. Audit on quarterly basis by Dy. CME(C&W)/Sr. DME.
3.	All worn out brake blocks are changed		
4.	All the brake rigging pins should be intact and of correct size		
5.	Hose couplings for brake pipe on consecutive coaches are coupled to one another		
6.	Hose coupling for feed pipe on consecutive coaches are coupled to one another		
7.	All cut off angle cocks are kept open except those at the rear end of the train		
8.	Brake pipe and feed pipe hose coupling at the rear end of the train are placed on their respective hose pipe coupling supports		
9.	Isolating cock of distributor valves of all the coaches are in open position		
10.	Isolating cocks placed before the auxiliary reservoir, brake cylinders and the passenger emergency alarm valve are in open position		
11.	Pressure gauges for brake pipe and feed pipe are provided in brake van		
12.	No leakage from the auxiliary reservoir, brake cylinder, control reservoir, and dirt collector		
13.	Ensure brake cylinder stroke and clearances between brake block and wheel		
14.	Conduct rake test as per coaching manual		
15.	Release brake and see that all the brake cylinder pistons are fully inside		
16.	Guard's emergency brake valve provided in brake van is working properly		
17.	Visual inspection of the rake/ coach is carried out to check any damage on the brake or feed pipe hose coupling or hanging hose pipe; the suspension brackets of air brake equipment and anti-pilferage device provided on the components are also checked for any defects.		
18.	The Air Brake sub-assemblies of coaches are cleaned thoroughly from outside. The moving parts such as slack adjuster and brake rigging system are greased		
19.	Leakage test is done for brake pipe, feed pipe and its connecting pipes		
20.	Service Application and Release test of the rake is performed to ensure full brake power		
21.	The Manual Brake Release test is carried out on every coach of the rake, to ensure proper functioning of the release lever, fitted below the distributor valve		
22.	Micro Switch Test is performed to ensure that the Cam operated Micro Switch provided on end wall near Passenger Emergency Alarm Signal Device for the audio-visual indication, functions properly		
23.	The guard van valve test is carried out on a coach to ensure functioning of the guard van valve during every alternate 'A' schedule		

24.	The passenger emergency alarm valve and device test is carried out on a coach to ensure that the passenger emergency alarm valve (PEAV) and passenger emergency alarm signal device (PEASD) work properly in conjunction.		
25.	Thorough inspection and repairs of brake gear components		Tri-monthly Note:
26.	The alarm chain pull test to ensure proper working of passenger emergency alarm system for partial application of brakes		1. Audit by CDO(C&W) 2. Audit on half yearly basis by Dy. CME(C&W)/Sr. DME.
27.	Thorough checks of slack adjusters for any damage and malfunctioning and subsequent replacement		Half Yearly Audit on half yearly basis by Dy. CME(C&W)/Sr. DME.
28.	Testing of pressure gauges and replacement of the defective or inaccurate gauge (for SLR/ Guard compartment)		