

Minutes of Meeting held at Electric Loco Shed Howrah on 06.09.17 with M/s KBIL on issues of CCB Brake System.

Members present:

Railways		M/s KBIL	
Designation	Name	Designation	Name
Director/Elect./RDSO/LKO	Sri Aseem Kumar	Chief Manager/KBIL	Sri A.Kumar
Sr.DEE/TRS/HWH	Sri S.K.chatterjee	Chief Manager/KBIL	Sri V.Sharma
Sr.AEE/TRS/HWH	Sri Jay Prakash	Sr. Manager Service/KBIL	Sri C.M.Sawakar
AEE/TRS/HWH	Sri Jayprakash Pal	Div. Manager/KBIL	Sri Y. Kumar
ADEE/TRS/TATA	Sri SatyaPrakash	Div. Manager/KBIL	Sri D.Chowdhury
SSE/TRS/TATA	Sri K.Bera	Dy. Manager/KBIL	Sri S. Kumar
SSE/ELS/HWH	Sri B.Sarkar	Asst. Manager/KBIL	Sri D. Majumder
SSE/ELS/HWH	Sri D.Seth		

Important reliability related points discussed and noted during meeting are as below:-

- 1) Population of CCB brake system equipped locomotives at Electric Loco shed TATA is 64 out of which WAP-7 are 03 nos. and WAG9 are 61 nos. Population of CCB brake system at ELS/Howrah in WAP-7 is 08 nos.

- 2) **Strainer in PVEM port of BPCP:-** To resolve the issue of entry of foreign material from BP line during emergency brake application by A9, M/s KBIL has provided strainer in some locos on trial bases at ELS/TATA & ELS/HWH. Both the sheds confirm that foreign particles are found in the strainer. It was suggested that strainer should be inspected and cleaned during every 6 months i.e. during every 2nd Inspection Schedule (Alternate schedule) in WAG-9 locos and every 9 months (i.e. 3rd Schedule) in WAP-5 & WAP-7 locos. Strainer can be taken out by hands from BPCP unit after opening and shifting it a little bit from its position on panel (Hanging position over the mounting bolts). The strainer should be put back after cleaning in PVEM port of BPCP unit. The staff should be acquainted/trained enough to put back the strainer in PVEM port and not any other port. Precautions should be taken while shifting and placing the BPCP unit back to its position without damaging the gasket and avoid over-tightening.

A joint trial with supervisors of ELS/TATA & ELS/HWH in presence of RDSO was done on 06.09.2017 at ELS/HWH by completely plugging the strainer with Cotton waste. Emergency brake application and BP charging after release was tested and found normal copy of joint testing is enclosed for perusal.

More than total 50 locos of ELS/TATA, ELS/TKD & ELS/GMO (cumulative) are already working with strainers in PVEM port of BPCP from six months. Therefore, based on the satisfactory working and joint trial, it is recommended that Strainer may be provided in 3-phase locos with CCB to improve reliability. Being an important item of brake system and also cleaning of strainer is not time consuming, it is decided to clean the strainer in every schedule of 3-phase locos provided with CCB.

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25/9/2017

- 3) **Dirt Collector in BP pipeline**:-Dirt Collectors were provided in two locos of ELS/TATA (31555 & 31426 WAG-9). The performance reported was satisfactory and no abnormality noticed till now. As per UIC code 541-1, 9th edition October'16 in para no. 2.6, it is mentioned that "The release of air to atmosphere from the train pipe, when the emergency alarm is operated, must be carried out in complete safety. The release pipe must not, therefore be fitted with either isolating cocks or dust filters". In view of this fact Dirt Collectors cannot be provided in BP pipeline, BP branch pipeline between main BP pipe and CCB panel and also BP branch pipeline between BP pipe and D1/D2 valve at both cab ends. Also, dirt collector in BP charging line may affect normal function of braking and BP charging in case of choking of dirt collector. However, dirt collector can be provided just before NB-11 valve after the T- joint of D1/D2 branch pipeline. This can avoid failures of NB-11 valves. But there is a constraint of space in providing the dirt collector in this region in existing locos.
- In future, in newly built locos tapping for D1/D2 emergency pipe line and NB11 may be separated so as to provide dirt collector. The firm's representatives stated that they are developing an improved version of NB-11 (similar to that of E-70) wherein the problem of sticking up of NB-11 due to foreign particles will be taken care of. Firm has submitted to RDSO the drawing of modified NB-11 valve where exhaust is along the axis of incoming pipeline. Firm also mentioned that position of NB-11 is horizontal in some locos, though it should have been in vertical position.
- 4) **Software modification to reduce brake application time through SA-9**:- Both sheds reported that after the software modification time of brake application through SA-9 is within permissible limits.
- 5) **Software modification to reduce max. BC pressure from 2.5 to 1.8 kg/cm² through A-9**:- The firm's representatives told that their software modification related to this is undergoing validation at NYAB, USA. They also told that it will be possible for sheds to change max. BC pressure setting as 2.5 or 1.8 kg/cm² as and when required for using CI or Composite brake blocks.
- 6) **Unloader Valves**:- The firm is supplying new type of Unloader Valves which are undergoing field trials. The firm has submitted drawing of the same to RDSO for approval. Firm is supplying Unloader Valves compatible with 10 mm pipelines. However, sheds reported there are some locos with 9.5 mm pipelines. For this matter sheds have to survey their locos and accordingly tell their requirement to firm.
- 7) **Electronic cards Failures**:-For the failures of MPIO, PSJB, RCP etc electronic cards. M/s KBIL stated that a sample of burnt card has been sent to M/s NYAB, USA. Burnt card is under testing by NYAB to find out the reasons of burning of resistance provided in the card which is the main cause of card failure. Report is awaited and during meeting at RDSO on 21.08.2017 that report shall be submitted to RDSO within a period of one month.
- 8) **PVEF/Bail-off to be inoperative during emergency brake application**:-In order to keep PVEF/Bail-off inoperative, the signal to CCB should be low during application of emergency brake. M/s KBIL has already committed during meeting at RDSO on 21.08.2017 that it will be implemented through software modification by NYAB within a period of 6 months.


25/9/2017

- 9) **Failures of valves due to moisture from Auxiliary reservoir:-** M/s KBIL has made the provision of Moisture draining arrangement in one loco at ELS/RPM (SR), but as per report of ELS dated 09.02.17, this modification does not ensure complete draining of moisture because the location of drain port is taken from the middle of the aux. reservoir. To resolve this issue drain arrangement should be provided at the bottom of aux. reservoir. As decided during the meeting at RDSO on 21.08.2017, M/s KBIL has to submit suitable scheme with drawings of drain arrangement to RDSO for approval which will be used initially in 50 nos. i.e. new locos at CLW.
- 10) **Bursting of 'O' ring in feed valve:-** The firm has recommended to check and clean feed valve during every Overhauling schedule.
- 11) **Spares for attending warranty:-** Sheds insisted that at least 2 no.'s of sets should be kept in each shed as spare for which the firm agreed. Firm also advised that sheds should procure maintenance kits as per the maintenance manual.
- 12) **Other issues raised by sheds:-**
- Paper filters provided in pneumatic circuits like ACF, MRF, 20F & BCF should be modified to give better service life. Sheds apprised that in the E-70 brake system they are using wire mesh filter and CDC with drain arrangement. Firm is requested to look into the matter and provide solution.
 - 6.5 mm choke for BC should be standardized for all three phase locos having CCB. This matter is already referred by the firm to RDSO and timings of independent brake application with 6.5 mm choke for WAG-9 and WAP-5 are to be submitted to RDSO as per the RDSO letter of even no. dated 01.09.17.
 - During application of independent brake by SA-9 there is a delay of about 1 second in response. However, total application time is under permissible limit. Similarly during release of independent brake by SA-9, BC pressure release time from 0.4 to 0.2 kg/cm² is about 4-5 seconds. However, Independent brake release time from full (3.5 kg/cm²) to 0.4 kg/cm² is within limits. Firm is requested to look into the matter.
 - Presently filters are to be changed after 1 year of service as per firm's recommendation. The schedules of 3-phase locos are 18/24 months frequency. Hence the firm is advised to look into the matter and see whether filters can be changed after 24 months of service and it may be included in schedule maintenance kit.
 - AFL sometimes is not working when BP pressure is dropped gradually in standstill condition. This problem is to be studied further by sheds and firm jointly.
 - Traction comes late after releasing of brakes through A-9. This problem is to be studied further by sheds and firm jointly.
 - Training of staff in premises of M/s KBIL at Faridabad as well as in their sheds is required at regular intervals.
 - Laptops configured with CCB system for every 5 no.'s of CCB should be provided to sheds by CLW against the procurement.

Enclosure: Joint note of the testing done at ELS/Howrah on 06.09.17.

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Joint trial note between RDSO, Electric Loco Shed, Howrah , Electric loco Shed, TATA and M/s KBIL at Electric Loco Shed, Howrah on 06.09.17

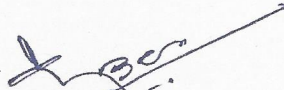
Testing done on Loco no. 30490/WAP7 of HWH based fitted with CCB brake System provided with M/s BHEL make VCU

The following points were jointly checked and found as follows :-

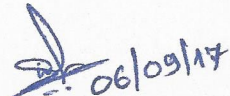
1. Provided strainer mesh for PVEM exhaust and checked emergency application - Emergency application was taken place and BP dropping instantly $< 0.5 \text{ kg/cm}^2$. After that BP charged back normally after recovering emergency penalty.
2. Plugged PVEM strainer mesh with jute and applied emergency - Emergency application was taken place and BP dropping instantly $< 0.5 \text{ kg/cm}^2$. After that BP charged back normally after recovering emergency penalty.
3. Brake application started approx. 01 sec. delay after movement of brake handle incase of A9 as well as SA9 brake application. However, application time found within specified limits.
4. Brake cylinder pressure release time from 0.4 kg/cm^2 to 0.2 kg/cm^2 - 4- 5 seconds. However Independent Brake release time from full to 0.4 kg/cm^2 in within limit.
5. Provision of Dirt collector in the path of NB11 – physical position has been checked in this loco and space is not available to provide the same .
6. Working of AFL – the working of AFL was checked at stand still condition, AFL was working at above 70 PSI after sensing the direction of the locomotive by applying throttle and wait for 01 minute (masking time) and then apply D1
7. Above observations if required will be further checked on more locomotives




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SSE/M5/ELS/HWH



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(C.M.Sawakar)
Representative of M/s KBIL


Countersigned

Dir/RDSO