

Good work done in the year 2021-22

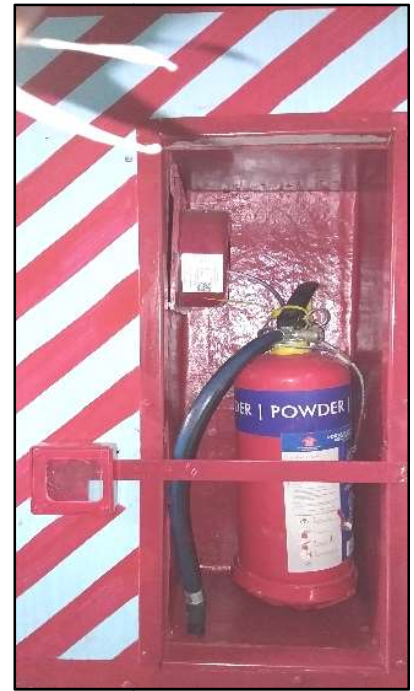
1. Sunken housing for keeping Fire Extinguishers in Non-AC coaches:

At present fire extinguisher in Non-AC ICF coaches are mounted on wall in vestibule passage outside the lavatory. Protruded fitment of fire extinguishers in passage not only makes passage narrow but also causing difficulty to the passengers.

To avoid above situation, sunken housing has been developed behind main door in coach no. CR 111146 WGSCN of train no. 02131/32 Dadar - Dadar Sainagar Shirdi Express which is not only accessible easily but also avoids hindrance on passage.



Before



After

2. Development of Luggage compartment fire suppression system :

Luggage compartments are prone to catch fire. Luggage compartments are sealed after parcel loading hence fire suppression is likely to be delayed for opening of sliding doors and use fire extinguishers to suppress fire.

NCC WB coaching depot has came up with an idea by developing one prototype model for discharging DCP fire extinguisher fumes inside guard compartment on such emergency through a pipeline from the Guard compartment.

In this system, a fire extinguisher is mounted on wall in side Guard compartment is connected to a pipe line having discharge many vent inside the luggage compartment. In case of emergency, fire can be suppressed by removing lock pin of fire extinguisher and simply pressing the operating handle.

The system has been provided on luggage compartment of coach no. CR 04704 SLR of train no. 01205/06 Vidarbha Express on trial.



DCP Fire extinguisher mounted on wall inside Guard compartment and connected to pipeline going inside the luggage compartment

Pipeline connected to DCP fire extinguisher has many discharge holes inside the luggage compartment.



Remote operation of fire extinguisher cause spray of DCP in side luggage compartment

3. Dye Penetrate Test (DPT) of Knuckle of AAR H type Center Buffer Coupler:

On date 18.05.2021, coach no. CR CR17417 GS (POH: MTN-16.11.2019 ,R/D: 06/21 ,IOH: WB-11.11.2020 of train no. 02106 UP was uncoupled in BRD-KHAT section of Central Railway while on run due to breakage of knuckle.

Therefore, as a preventive measure Dye Penetrate Test (DPT) of Knuckle of coaches of 01205 /06 Vidarbha Express was done.



Surface Preparation: The surface is thoroughly cleaned, to make it free from dirt, oil, paint, grease, water, or other contaminants.

Penetrant Application: After a thorough cleaning, Penetrant is applied.

Application of Developer: After a thorough cleaning, a thin layer of developer is applied. And thereafter inspection is done and refitted if passed.

4. Commissioning of newly built Vistadome coaches in Mumbai Division:

State of the art newly built three (3) Vistadome tourist coaches with larger viewing area including roof top glasses and many other eye catching features have been commissioned on trains no. 11007/08 Deccan Express ,12051/52 Janshtabdi Express and 12123/24 Deccan Queen Express.



Salient features:

- Rotatable seats which can rotate up to 180 degrees for passengers.
- Wi-Fi-based passenger information system.
- Wider entrance doors for divyangjan persons, or those on wheelchairs.
- Automatic sliding doors at the compartment's entry
- CCTV system for onboard surveillance.
- Pressurized flushing systems and bio toilets
- Automatic fire detection with alarm system
- Public Address - cum Passenger Information System
- Mini pantry consisting of a hot case, microwave oven, coffee maker, bottle cooler, refrigerator and washbasin

5. Commissioning of newly built Self-Propelled Inspection Car (SPIC)

Newly built Self-Propelled Inspection Car (SPIC) no. 200102 CR to be used for emergency inspection and also for reaching railway sites in exigencies for restoration has been successfully commissioned at CSMT coaching depot.

SPIC was inaugurated by General Manager, C.Rly on 5th June 2021 at Lokmanya Tilak Terminus.



6. Development of gadget for testing of FIBA unit:

FIBA (Failure Indication Cum Brake Application) device is fitted in Air suspension coaches for detection of air spring running in deflated condition due to leakage in system/punctured air bellow. It senses air pressure inside air bellow and apply brake whenever pressure drops below to designed pressure of minimum 1 Kg/Cm². Malfunction of FIBA (Failure Indication Cum Brake Application) device causes detention of trains for time taken in resetting/isolating the system though no defect is found in air suspension system.

In order to check reliability of FIBA device during D2/D3 preventive schedule of LHB coaches, a gadget has been developed.

With the help of this gadget, FIBA device is checked for malfunction and operation above designed pressure of 1 Kg/Cm². At the same time it facilitates draining of auxiliary reservoir of air spring.



No drain cock is provided in design for Air spring air reservoir in LHB coaches

Gadget facilitate checking of FIBA device and draining of AR

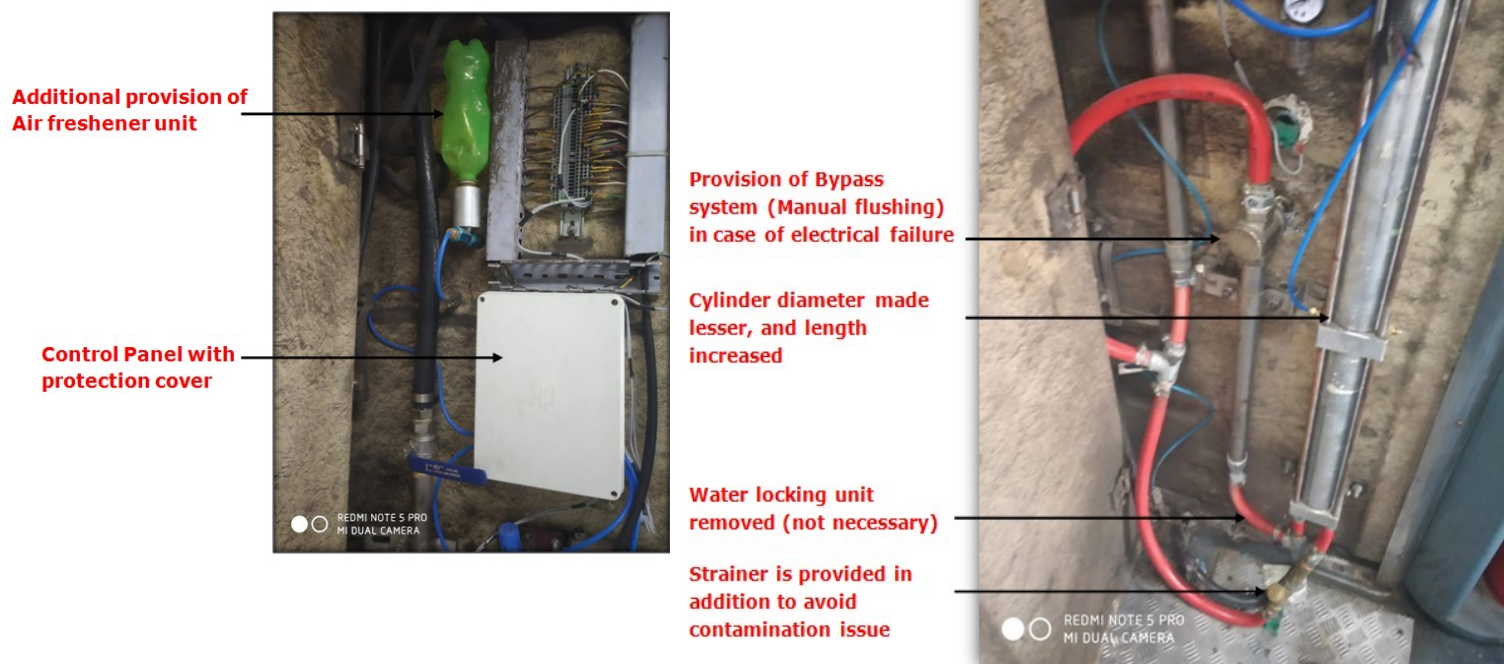
Checking of FIBA device for malfunction with the help of Gadget

7. In-house development of Improved Pressurized Flushing System with provision of air freshener:

In order to make the cleaning more effective, pressurized flushing system is provided in new LHB coaches by Production units. However, the following difficulties are being faced during maintenance of these pressurized flushing systems.

1. Solid particles inside cylinder cause frequent failures of rubber seals and choking of flushing nozzles.
2. Erosion of Aluminum pistons
3. Failure of spring of water locking unit
4. Exposure of electronic circuit to ingress of water and developing shock
5. Non-availability of spares (OEM controlled spares)
6. No- provision of manual mode flushing in case of malfunction of system

Learning from the experience and trouble shooting, LTT coaching depot has come up with noble idea of development of improved pressurized flushing system to eliminate above issues for utmost passenger satisfaction. Improved Pressurized Flushing System is installed in coach no CR 15141 LWACCN under trial & monitoring.



Arrangement of Improved Pressurized Flushing System with provision of air freshener

8. New Coaching Complex Wadibunder Coaching Depots creates incredible 3D Model of Make in India campaign:

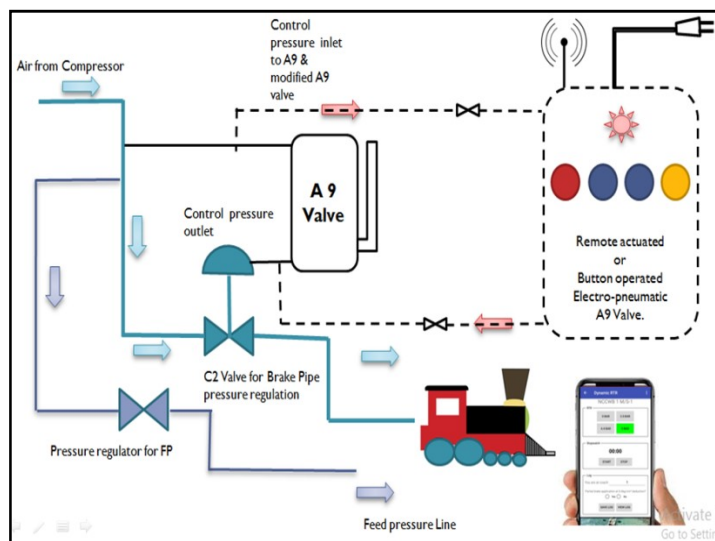
New Coaching Complex Wadibunder Coaching Depots has created incredible 3D Model of Make in India campaign utilizing scrap materials from depot and MTN workshop. Scrap Nut and bolt, gears, springs, brake shoe head, MS sheet, tension rod have been utilized to make this sculpture.

The sculpture not only attract staffs to new form of artwork but also give message of a meaningful activity of promoting and plasticizing environmental awareness through utilization of waste materials.



9. In-house conversion of conventional Rake Test Rig (RTR) into App based Remote Controlled Rake Test Rig and improvement of Rake test rig workstation:

Air Brake system of the coaches is tested by using a 'Rake Test Rig'. Normally, rake test rig is operated by one staff getting advice on walki talki from coworker working on a remote coach. In order to ensure quality of air brake testing by eliminating element of communication gap, Rake test rig of maintenance siding no. 6 at Wadibunder has been converted into App based Remote Controlled Rake Test Rig along with improvement in workstation. **Using mobile application for operation of test rig allows staff to test any particular coach repeatedly and observe components behavior meticulously.**



10. Development of training coach:

Condemned ICF Coach CN 00296 CR was converted into a Training coach by Basic Training Center, WB. This is an excellent initiative and will help in upgrading the knowledge of staff. The under floor, turn under and all the structural components are visible as cut portions. The staff will have a deeper insight of coach working and also help in appreciation of various defects.

Cut models of components are also displayed. Working model for the Fire suppression system, pressurized flushing system was displayed so that troubleshooting of various defects which arise during maintenance can be taught to the staff.

The training coach was inaugurated by GM /C. Rly on his annual inspection at Igatpuri, C&W Depot on 6th March, 2022.



11. Publishing of Technical Booklets:

Technical booklet on "troubleshooting of Bio-vacuum evacuation system in coaches" and "On board housekeeping service in trains". The booklet of Bio-vacuum evacuation system covered instructions, constructional details, working principal of components and troubleshooting guidance to the staff.

The booklet of On board housekeeping service provides the working guidelines to the OBHS staff during train enroute. The duty list of OBHS staff (Coach Mitra) which includes assistance in electrical problem rectification were published with a view to support skill development amongst staff.

These books were released by GM /C. Rly on his annual inspection at Igatpuri, C&W Depot on 6th March, 2022.

