

(यांत्रिक / समाधि)  
**MECHANICAL (C&W)**

**Innovation Work :**

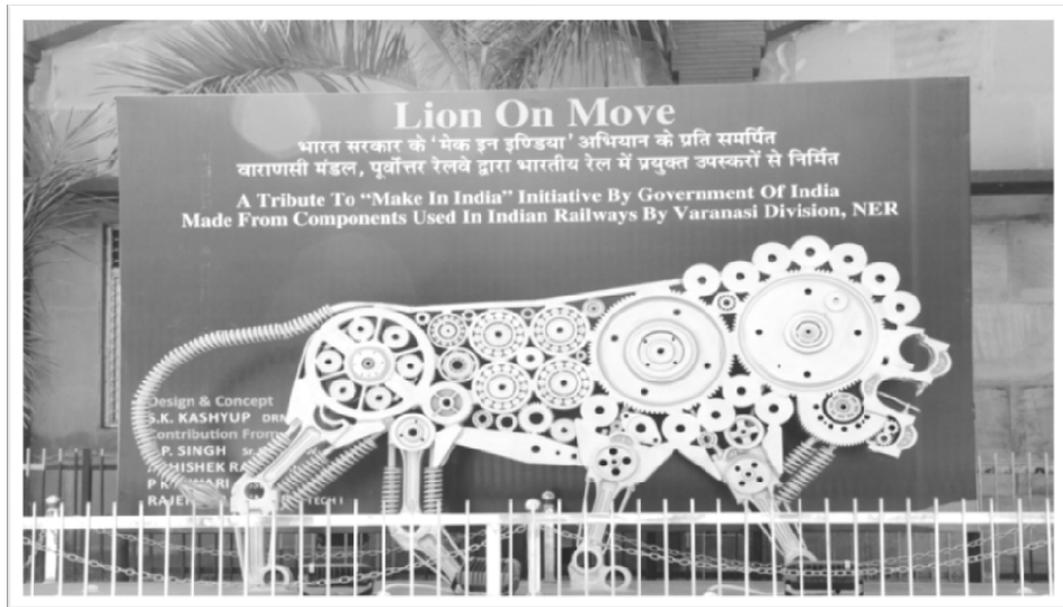
❁ **Izzat Ghar (Bio Toilet) :**

Coaching Depot MUV has developed 02 Nos. Bio-Toilet Room "Izzat Ghar" with own resources by condemned Coach Bio-Toilet Tank, scrap mica, tiles MS sheet etc.



❁ **Making of "Lion on Move" under 'Make in India' :**

To promote "Make in india" Coaching Depot Manduadih made 02 nos of "Lion on Move" by using of released old /useless gears, rollers bearings, pullies etc. 1 no of "Lion on Move" installed at Manduadih Station on dt. 26.01.2017 and other installed at PCME office Gorakhpur during 2017-18.



❁ **Making of "Auto Oil Dispenser" for dashpot oiling of coaches in coaching depot MUV :**

Previously, Dash pot oiling of coaches was done by manually with the help of bucket, keep and pitchkari gun.

Coaching depot Manduadih has developed an equipment "Auto Oil Dispenser" for dashpot oiling of coaches with their own resources and using of scrap materials etc. Wheels are fitted in this equipment for easy movement. Capacity of oil container of this equipment is 50 liter. 15 meter long height pressure flexible rubber hose with gun, pressure gauge and coupler to connecting height pressure pipe line is fitted in this equipment.



❁ **Retro fitment of TC with CBC in Shivganga Express :**

Retro fitment of transition coupling (TC) with CBC has done in three coaches (Coach No. - 14862 LWLRRM/NE, 14863 LWLRRM/NE & 14869 LWLRRM/NE) of train no. 12559/12560 (Shivganga exp. MUV to NDLS) by Coaching depot Manduadih staff. So that screw coupling coaches (i.e. RA) can attach in this train.



❁ **SANITIZATION TUNNEL :-** To prevent the pandemic COVID-19 and save our employees from this infection disease, a disinfecting tunnel has been made by C&W staff in sick line shed with the use of local resources. The above tunnel has been placed at entry so that staff coming for duty will reach their duty point after sanitization.

❁ **LHB Wheel Turning:-** On dated 01-05-2020 Successful wheel turning of an LHB Coach was carried out for the very first time in the Varanasi Division at Demu Shed ARJ. Successful wheel turning of coach No. NE 17433 is an important achievement for C&W Department of Varanasi Division. Earlier wheel turning used to require dismounting of wheel sets from Coaches at depots, dispatching of wheel sets to GKP workshop by road transport for turning and re-mounting of wheel sets on coaches upon return of wheel sets after turning, But at Demu Shed ARJ, All the wheel of a coach can be turned at once without any need for dismounting of wheel sets. The coach any 17433 itself was sent to ARJ by Rail after truing the coach is fit for the moment and shall return by rail only. This achievement will result in huge reduction in down time for coach maintenance, improvement of asset reliability and will also result in big saving for Railways.



❁ **Scrap Art (Band Party) for depot beautification -**

Various overage parts of coaches which are now condemn are used to fabricate various scrap art. With appropriate paint work these scrap art look lively. These art work are installed in depot garden, which has enhanced the look of garden.



❖ **New hydrant pipe line commissioned at platform No. 04 of MUV station :-**

New hydrant has been commissioned on newly built platform no. - 04 of MUV station. Before commissioning of this hydrant train no. 12165/66 Ratnagiri Exp. Which has to be placed on stabling line in coaching depot and only after departure of Bundelkhand Exp. could be taken a platform with hydrant and terminating examination , cleaning and watering could be done. Now with commissioning of this line , train terminating examination could be done on platform only and unnecessary shunting will be preventing and will also allow more time for terminating examination. This will be improve quality of work and safety. Apart from this it will also help in future when remodeling of varanasi junction station is done and likes of train like kamayani exp. 11070/72 can be taken to MUV.



❖ **Foot Operated touch sanitizer stand :-** In coaching depot with local resources available, 03 sanetizer stands have been fabricated to fight COVID-19. In this stand sanitizer dispencer knob is connected with pedal and lever, So as to operate it with leg and make it touch less.



❖ **Jal Seva by EnHM Wing at CPR-** To facilitate distressed passengers of Shramik special a **Jal Seva** initiate has been launched by EnHM Wing /BSB under the leadership of CDO/CPR Shri Harisankar Kumar .

Under this humanitious Campaign the drinking water top up of bottles is facilitated by flexible pipes upto the coach windows of all the trains halting at CPR Jn. This eliminates the need for getting down on platform. while passengers can refill this bottles, seated inside the coach.

❖ **Automatic Deep flange detection device at MUV depot :-**

Coaching depot MUV has prepared a deep flange detection device which will measure deep flange while coach is on move thus saving time in rake maintenance. The device is clamped to rail from inside so that wheel flange presses the upper plate of device. There are two plate, lower plate to be fixed at 35mm from rail head and upper movable which can be fixed at any position. So if wheel is having deep flange it will press upper plate till the point where it meets lower plate, and when two plate touches each other alarm will be activated and deep flange defect is detected automatically.

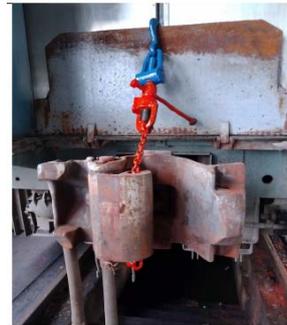


- ❖ **Automatic Temperature device at ARJ :-** DEMU Shed Aurihar has developed an automatic temperature device with the help of infrared thermometer. This device is installed at ARJ shed in entering gate and take temperature of all entering person automatically and saved time. This device is electric and battery operated both.



- ❖ **Water Booth at ARJ-** To facilitate distressed passengers of Shramik special a **Water Booth** made by DEMU Shed ARJ by local resources . and 5 Nos water booth has been sent to MAU.

- ❖ **A Gadget by Coaching Depot Chhapra :** In the series of innovations, Coaching Depot Chhapra has developed a local made gadget for the purpose of effective maintenance of Tight lock CBC along with its supporting device at pit line/yard/any where in less manpower. It is helpful in adjusting the buffer height very easily as per need. The photographs of the same is as under :-



**Benefits:-**

1. Requirement of less manpower than earlier practice.
2. Defects in CBC can be attended in pit line/Yards. No requirement to sick the coach.
3. Lightweight and user friendly. The above innovation has been appreciated and awarded by GM/ECR&NER. An award of Rs. 10,000/- has been sanctioned by him.

- ❖ **Coaching depot MUV :**

1. In this monsoon season palanted around 50 nos of trees in his areas.



2. Local bush fitting cum removal device prepared in coaching depot muv. Now bushes of control arm and other link of LHB coaches can be assembled and disassembled in depot it self thus saving time.



3. Barricade cum gate prepared for coaching depot campus to prevent unauthorised access of out sider and animal inside campus.



✿ **EnHM Drive** : Special Cleanliness Drive at all major station ( AMH, CPR, BUI , BLTR, DEOS, GCT,MAU & SV ) and DEPOT (CPR, GCT, MUV & PRRB) under **EnHM/BSB/N.E.railway** organized from 11<sup>th</sup> August, 2020 to 16<sup>th</sup> August, 2020. Various type of Drive conducted at all major station & DEPOT.

- ✓ 11.08.2020 – Clean Drain Day
- ✓ 12.08.2020 – No to Plastic Day
- ✓ 13.08.2020 – Swachh Karyalay Day
- ✓ 14.08.2020 – Swachh Train Day
- ✓ 16.08.2020 – Plantation Day

At all Major Station 10-12 Staff & Supervisors participated in drive and contributed to maintain cleanliness at station & DEPOT. They also aware to other staff and passengers to maintain social distancing and wear the Nose mask to avoid the Spread of COVID 19.

✿ **Secondary Suspension Maintenance Gadget**: In the series of innovation, Coaching depot Chhapra has developed a local made gadget for the assembling and disassembling of Bolster of LHB Coaches (FIAT Bogie). Before it, the assembling and disassembling of bolster was a very lengthy process at depot level, but after the innovation of this gadget, it is very easy to assemble and disassemble the bolster of LHB coaches (FIAT Bogie). It helps in safe maintenance practice with compliance to all Camtech manual instructions for LHB coaches.



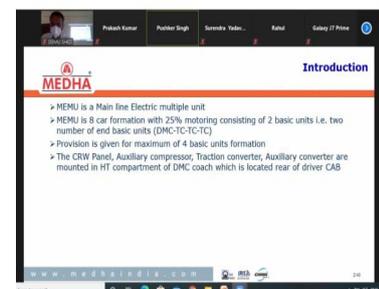
**Benefits:-**

1. It will help in safe maintenance practice with compliance to all Camtech manual instructions for LHB coaches.
2. Easy to assemble and disassemble the Bolster of LHB coaches.
3. This device is Portable and user friendly.
4. By using this gadget, it is not required to lift the coach-body multiples times. The above

innovation has been appreciated and awarded by DRM/BSB. An award of Rs. 5000/-has been sanctioned by him.

✿ **Technical Webinar of MEMU** : A one day technical Webinar on "3 Phase MEMU: Introduction & Trouble Shooting" was organised by DEMU& MEMU shed ARJ. CRSE /FRT, DyCME/Plant/ Gorakhpur and Sr.DME/C&W/ BSB graced the webinar with their presence which was attended by officers, supervisors and staff from DEMU

shed/ARJ, Mechanical workshop/IZN and Mechanical Workshop/Gorakhpur. LPs and LIs of different Lobbies of BSB Division also attended the Webinar. Presentation on different



systems of 3 Phase MEMU and their Troubleshooting were made by Shed Supervisors and Medha representative. The webinar was appreciated as informative and useful by all the participants. :-

- ❖ **Environment upgrade at Sivan:** Siwan Railway Station is major station of Varanasi Division of N.E. Railway. Many VIP Train & other passenger Train Passing through this station daily . There is total 10669 footfall per day, so it is very important station. There is a space between Track No. 1 & 2 which is very awful littered by passenger and many unused Sleepers are placed in hazzardious manner, which looks very lousy. So CHI/SV, HI/SV, SMR/SV, SSE/C&W & IOW/SV and other Housekeeping staff take some positive initiative, to maintain this dirty place. so they planted some flowring & beautiful Plant and make it like a mini garden. some photes are attached below -



- ❖ **Fit India freedom Run by C&W :** With due respect of social distancing norms. Under the fit india programme an event organized in N.E.Rly Stadium/Varansi. All the participants of the C&W department were encouraged for regular exercise to live a healthy life also a trial run was organized for the same.



- ❖ **FIBA Training at BUI :** Organize a training at coaching depot BUI to educate about FIBA device in LHB coaches.

1. When the pressure of the air spring drop to more than 1 Kg/cm<sup>2</sup> FIBA device become active, the indicator red and the pressure of the BP main pipe drops.
2. The air spring of wich coche's trolley can be easily detected by the FIBA (Failure indication brake application) device.
3. The coach whose air spring bad, isolate the trolley and allow the vehicle to reach the destination point upto 60kmph speed.



- ✿ **Primary spring disassembling & assembling Gadget:-** While doing the SS-I of FIAT Bogies at depot level, it was felt that Control arm pin were being removed without loosening the control arm bolts which was leading to the damage in threads of those bolts. In order to mitigate this problem, a gadget has been developed to disassemble and assemble the control arm along with Primary springs. This gadget solved the above problem. This gadget also helped in making the maintenance easier than the earlier. The photograph of the same is as under:-



- ✿ **Quick Watering System :** - Quick watering system (QWS) with three new hydrant lines was completed at MUV station on 29.09.2020 the quick watering system at MUV is the first (QWS) Quick watering system to have been completed in NER. This system comprises of three high pressure pumps of 40 HP and arrangement of moterized valve which enables watering of platform rakes at a high pressure and discharge late. With the Quick watering system in place, a 24 coach rake can be watred in 05 minutes and only those hydrants can be change which are required by the supervisor on duty via pannel operation.



- ✿ **Swachchhta Pakhwara :-** Varanasi Division celebrated "Swachhhta Pakhwada-2020" from 16 to 30 Sept. 2020 with day misc action plan payer sanctioned by DRM/BSB. During Swachhhta Pakhwara all divisional officers & employees participated actively. Swachhhta pakhwara started on 16<sup>th</sup> Sept with Swachhhta pledge & followed by special drive initiated for swachh samvad, Swachhha station, Swachhha railgaadi, Swachh parisar, Swachh neer, Swachh prasadhan, Swachh aahar & Swachh competition at all major stations, depots, Swachhhta awareness for colonies and officers. Awareness regarding social distancing & use of mask to avoid the spread of COVID-19 was also emphasized upon. On 29<sup>th</sup> sept during swachh competition best maintained train, best maintained station (A-class & other than A-class) Best maintained office & best maintained colony awards were handed over by DRM/BSB on Gandhi Jayanti..



- ✿ **CSR Initiative for plastic waste disposal:-** A CSR initiative by **Rotary Club Varanasi, Uday & Shree Recyclo Power Varanasi** was started at Manduadih Railway Station under collaboration with EnHM / C&W / Varanasi Division. Under this initiative, dedicated bins for plastic waste segregated and collection have been installed in the circulating area. Plastic waste thus collected, will be disposed / recycled by the concerned agency free of cost.

The initiative was launched off on the occasion of Gandhi Jayanti, 02<sup>nd</sup> Oct. 2020 from the Manduadh Station.

✿ **Air Flow measurement gadget:** - An air flow measuring device was prepared in coaching depot/ MUV with the objective of reducing air leakage in rake. The device was prepared using an air flow measuring valve, an air flow measuring indicator and air connecting hose. The device when used during air brake testing reduces the need for soap solution testing thus reducing corrosion in pipe in long term and can reduce brake power testing time. Also when this device is used between loco and rake at train passing it reduces the probability of dispute arising between loco and C&W due to AFI in loco cabin showing high flow.



✿ **CTRB Presentation :-** In last few months there have been a lot of cases of CTRB failure in LHB coaches over other railways which have led to lot of train detention and passenger discomfort apart from unsafe train operation. In view of above a presentation was given by CDO/MUV on the topic, which covered various topics such as CTRB working design, routine maintenance, preventive measures etc. Around 70 supervisors from all 3 divisions of NER joined the online presentation which was followed by question and answer session. Presentation was graced by CRSE/Chg./NER, Sr.DME(C&W)/BSB and Sr. CDO/GKP and was appreciated by all.

✿ **Silent Bushes Gadget :** In the series of innovations, Coaching Depot Chhapra has developed a local made Hydraulic press for the purpose of effective maintenance of LHB coaches in sick line during SS-I at depot level. It is a fabricated rectangular shape device having one 20T capacity hydraulic jack. It is helpful in performing following maintenance activities during SS-I:-

1. Mounting & Dismounting of Silent bushes in control arm.
2. Mounting & Dismounting of Silent bushes in traction levers and traction links.
3. Mounting & Dismounting of Silent bushes in antiroll bar links.
4. Pressing of Minor rubber pads used in Secondary suspension.



**Benefits:-**

1. It is a versatile type of device as it can be used for mounting & dismounting all kinds of silent bushes used in LHB & ICF Coaches. It made the SS-I activities easier at depot level.
2. Same device, if purchased will cost approx. 5 lac whereas this device has been developed by means of local and unused resources at depot level. Thus it saved the railway revenue also.

\*\*\*\*\*