



# MODERN COACH FACTORY

## ANNUAL REPORT 2018-19



**WE ARE THE  
FUTURE**





Annual Report  
2018-19

आधुनिक रेल डिब्बा कारखाना, रायबरेली

MODERN COACH FACTORY, RAEBARELI



मैं 31 मार्च 2019 को समाप्त हुए वर्ष के लिए आधुनिक रेल डिब्बा कारखाना, रायबरेली के कार्य की रिपोर्ट अग्रेषित कर रहा हूँ।

I, forward herewith, the report on the working of Modern Coach Factory, Raebareli for the year ending 31<sup>st</sup> March, 2019.

(सुनीत शर्मा)  
महाप्रबंधक

(Suneet Sharma)  
General Manager

सचिव  
रेलवे बोर्ड,  
नई दिल्ली।

The Secretary,  
Railway Board,  
New Delhi.



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**Important milestones:**

- Foundation stone laid by : Feb' 2007
- Commencement of land acquisition : Aug'2007
- Preparatory construction work commenced : Feb' 2009
- Actual Construction of Factory started :May' 2010
- Commissioning of 33 KV Transmission Line : Jan' 2011
- Finishing & Furnishing shop work completed :April'2011
- First Coach Furnished from shell supplied by RCF/KXH : April'2011
- Furnishing of 1<sup>st</sup> coach :April'2011
- Furnishing of 1<sup>st</sup> LWSCZAC(Chair Car) :June' 2012
- Furnishing of 1<sup>st</sup> LWFCZAC(Ex. Chair Car) : July' 2012
- Dedication of factory to the Nation :Nov' 2012
- Furnishing of 1<sup>st</sup> LWACCW coach :Nov' 2012
- First Shell Assembly : July' 2013  
(Major sub assembly by RCF/KXH)
- Rolling out 100<sup>th</sup> coach : July' 2013
- Assembly of First LHB coach shell by MCF : July' 2013
- Completion of Bogie shop : Feb' 2014
- Completion of Shell, Paint and Machine shops : Mar' 2014
- Rolling out 200<sup>th</sup> coach :April'2014
- Manufacture of first LHB coach shell by RCF/RBL :Aug' 2014
- Furnishing of 1<sup>st</sup> LWSCN coach :Sep' 2014
- Completion of Administrative Building : Nov' 2014
- Commissioning of 132 KV MRS : Jan' 2015
- 100<sup>th</sup> Shell, Manufactured :June' 2015
- 1<sup>st</sup> LSCN Shell, Manufactured :July' 2015
- 100<sup>th</sup> Bogie Manufactured :Dec' 2015
- RCF, Raebareli Renamed (MCF), Raebareli :Dec' 2015
- 300<sup>th</sup> LWACCN Coach Furnished :Jan' 2016
- Rolling out 500<sup>th</sup> coach :Feb' 2016
- 1<sup>st</sup> GS Shell Manufactured :April'2016
- IMS Certification :Oct' 2016
- 800th Coach furnished :Oct' 2016
- 1<sup>st</sup> Rake of Humsafar coaches despatched :Nov'2016

- Rolling out 1000<sup>th</sup> coach :Jan' 2017
- 1<sup>st</sup> Rake of Antyodaya Coaches dispatched :April'2017
- 1<sup>st</sup> Power Car shell manufactured :May' 2017
- 1000<sup>th</sup> Shell manufactured :May' 2017
- 5<sup>th</sup> Rake of Humsafar coaches despatched :June' 2017
- 1<sup>st</sup> Power Car handed over to ZR :Oct' 2017
- 1<sup>st</sup> coach of Deen Dayalu despatched :Jan' 2018
- Total 25 nos. Power Car handed over to ZR :Mar' 2018
- 2000th Coach Rolling Out :May'2018
- 1st SMART Coach dispatched :May'2018
- 3000<sup>th</sup> Coach Rolling Out :Jan'2019



**General Administration**



**The Team MCF**



**Shri Suneet Sharma**  
General Manager



**Sh. Anoop Kumar**  
PCME



**Sh. Alok Kumar**  
CAO



**Sh. Deepankar Day**  
PCEE



**Sh. A.K. Pandey**  
PCMM



**Sh. Jaidev Kumar**  
PCPO



**Sh. R.B. Yadav**  
PCE



**Sh. Dawa Chhering**  
(PFA)



**Dr. Anil Gupta**  
CMO



**Sh. Inderjit Singh**  
CDE



**Sh. Sandeep Shukla**  
CMM



**Sh. Pranjeev Saxena**  
CME/IT



**Sh. R.S. Bhidonia**  
CEDE



**Sh. Anil Kumar**  
CME/P



**Sh. R.N. Toppo**  
SDGM & CVO



**Sh. S. K. Katiyar**  
CPM



**Sh. R.N. Meena**  
CMM/Fur.



**Sh. S.K. Rawat**  
CPLE



**Sh. B.L. Meena**  
FA & CAO/P



**Sh. A.K. Shukla**  
Sr. SC



**Sh. R.P. Sharma**  
Secy. to GM

## PUBLIC RELATIONS & PUBLICITY

### 1.0 CELEBRATIONS (IMPORTANT DAYS):-

#### 1.1 Bharat Ratna Dr. B.R. Ambedkar Jayanti

126<sup>th</sup> Birth Anniversary of Bharat Ratna Dr. B.R. Ambedkar, celebrated on 16.04.2018 at Saraswati Auditorium MCF/RBL. On this occasion speakers paid tribute to Dr. Bhim Rao Ambedkar remembering his contribution to the society and the nation.



#### 1.2 Railway Week Award

63<sup>rd</sup> Railway week Award was celebrated on 20.04.2018 at Saraswati Auditorium, MCF, Raebareli. Shri Rajesh Agarwal, General Manager, MCF/RBL was the Chief Guest on the occasion. He presented awards to 13 Officers and 151 employees, besides of group awards to employee for their outstanding services in their respective fields. The function concluded with a colourful cultural programme.



### 1.3 National Technology Day

National Technology Day was observed on 11.05.2018. In which a technical programme was organised at factory premises and TTC auditorium of MCF/RBL



### 1.4 Mother's Day

Mother's Day program was organised by Raja Bhasha Department on 14.05.2018 at MCF/RBL. On this occasion Sh. Rajesh Agrawal General Manager MCF/RBL and Smt. Dipti Agrawal President WWO MCF/RBL were present. Awards were given to winner women employees for Hindi essay writing competition.



### 1.5 International Yoga Day

International Yoga Day was celebrated on 21.06.2018 in which a yoga camp was organised in Central Park of MCF/RBL where officers, staff and their families participated and practiced Yoga and Pranayam under guidance of a trained yoga instructor as per protocol issued by Ministry of AYUSH.



## 1.6 World Environment Day

“World Environment Day” was celebrated at MCF/RBL on 05.06.2018. On this occasion trees of different kinds were planted in Workshop and Township premises of MCF/RBL and on this occasion, a Cultural Program was organised regarding the issues and to the save environment.



## 1.7 Independence Day

72<sup>st</sup> Independence Day was celebrated on 15th August 2018 in a befitting manner. National flag was hoisted by Sri. Rajesh Agrawal GM/MCF/RBL and parade was displayed by RPF culture programme was organized by MCF.



## 1.8 Hindi Divas

Hindi Divas Pakhwada Organised from 10.09.2018 to 14.09.2018 at MCF/RBL. On this occasion various programs were organised like Hindi Quize competition, essay writing, competition etc. A meeting was also conducted to promote Hindi in day to day work.



## 1.9 Republic Day

Republic Day was celebrated on 26.01.2019 in MCF/RBL campus with full enthusiasm. Shri Suneet Sharma GM/MCF/RBL addressed to employees and a cultural program was presented by students of Gyanda Bal Mandir.



## 2.0 SEMINAR:-

### 2.1 Vigilance Awareness Week 29.10.18 to 03.11.17

The Vigilance Awareness week, 2018 was observed at Modern Coach Factory, Raebareli from 29.10.2018 to 03.11.2018 as per directives issued by Railway Board. The main theme of this year's Vigilance Awareness Week was "Eradicate Corruption- Build a New India". Various activities were conducted during this week like Vigilance pledge in administrative building & workshops premises. Pamphlets, posters and hoarding exhibiting anti-corruption themes were distributed and displayed at prominent places in admin building, workshop and township premises.



## 3.0 VISITS:-

### 3.1 Visit of Hon'ble Textile Minister Govt. of India- Smt. Smriti Zubin Irani Textile Minister Govt. of India visited MCF/RBL on 07.09.2018.



**3.2 Visit of Hon'ble Chief Minister of Uttar-Pradesh - Shri Yogi Adityanath**  
**Chief Minister of Uttar-Pradesh visited MCF/RBL on 13.12.2018.**



**3.3 Visit of Hon'ble Prime Minister of India- Shri Narendra Modi Prime Minister of India**  
**visited MCF/RBL on 16.12.2018.**



\*\*\*\*\*



**Mechanical Department**





# DESIGN

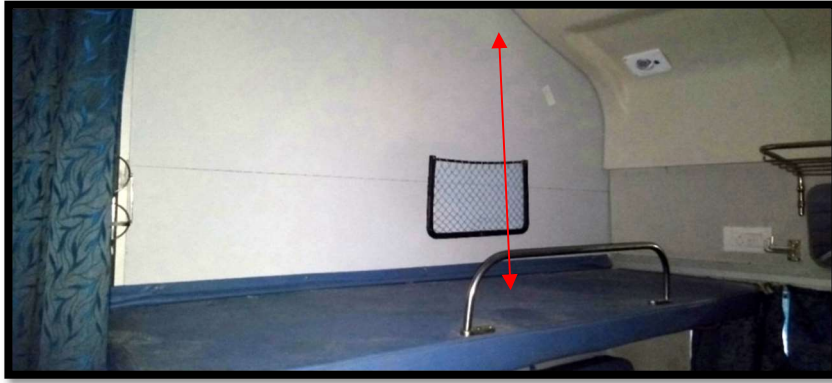


Activities undertaken by design office during the year 2018-19 (up-to 31<sup>st</sup> March, 2019) have been listed in three heads: -

1. Various design improvements
2. New coach variants
3. Other initiatives

## 1. Various Design Improvements:

<b>I. AC-2T Coach in 3T shell</b>	
<b>Coach Type</b>	LWACCW (AC-2 Tier)
<b>Objective &amp; other details</b>	
Need for more head space in LWACCW coach was always been felt and MCF has taken initiative to use LWACCN Shell with necessary design changes to mount seats and berths of LWACCW. This has given additional 185 mm head space to lower berth passengers and 69 mm additional head space to the upper berth passengers in compartment area. This has also helped in standardizing the shell design for LHB AC coaches. All LWACCW being turned out from MCF will have this feature. This has also given flexibility to MCF to produce both variants on single shell design.	



**Advantages**

- The head room for upper and lower berth passengers in transverse side has been increased.
- Standardization of shell design.

**Cut-in**

100 % cut-in form 2019-20.

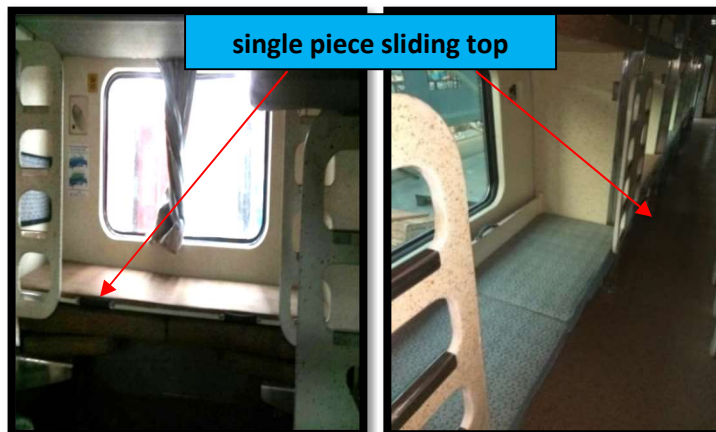
**II. Sliding lower berth arrangement:**

**Coach Type**

LWACCN, LWACCW, LWSCN

**Objective & other details**

MCF has taken initiative to provide better comfort to the longitudinal lower berth passengers by introducing single piece sliding berth. The weight of sliding lower berth has been kept bare minimum for its easy use by the passengers.



**Advantages**

Single piece sliding berth will give uniform levelled berth for sleeping passengers giving complete comfort in comparison to sagging berth at middle portion in conventional design.

**Cut-in**

100% Cut-in in LWACCW, LWSCN & LACCN coaches from 2019-20.

### III. Corrugated side wall

Coach Type

LSCN (Sleeper)

#### Objective & other details

The problem of undulations in side walls has been an area of concern and MCF has taken initiative to develop corrugated side wall with single horizontal lap joint and seam welding. Prototype Coach has been manufactured and based on response by the passengers and Railways its regular adoption will be planned.



Undulation free coach

#### Advantages

- Undulation free Coach features.
- No Skin tensioning required. Hence increase in productivity
- Only single horizontal seam welding in place of existing 14 vertical laser butt welding and thus reduction in welding activities, consumables and energy consumption.

#### Cut-in

02 nos. prototype of LSCN coach has been developed. Design is under validation.

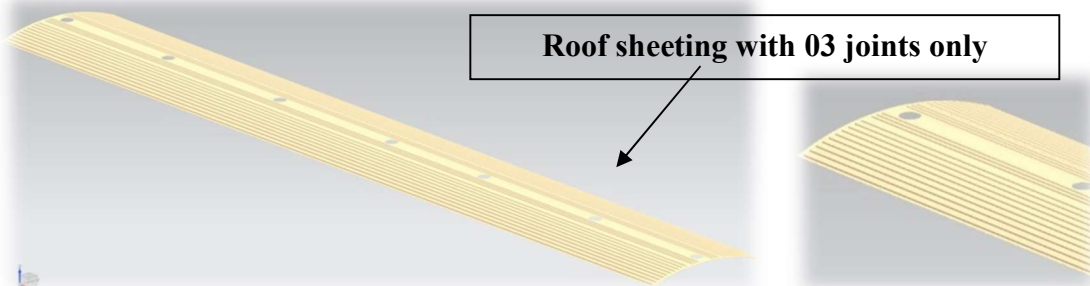
### IV. Switch over to CRF components

Coach Type

ALL LHB coaches

#### Objective & other details

As per LHB drawings the tolerances in side wall has been kept as  $\pm 14\text{mm}$  and for underframe it has been provided as  $\pm 16\text{mm}$  and thus resulting the extreme variance of 30mm. This results into variance in cabin sizes, overall size of the shell and out of squareness and resulting further problem during furnishing. In order to overcome this problem MCF has designed and introduced CRF components in single piece for manufacturing of various variants of coaches. The various components that have been redesigned in CRF are Roof Flange, Sole bar, Roof sheeting, Carline, Trough floor, and Z-section. The CRF components will be in single piece against multiple joints for full length components. This has also helped in reducing the tolerances to  $\pm 2\text{mm}$  for side wall as well as roof and underframe.



Single piece Solebar

Sole Bar

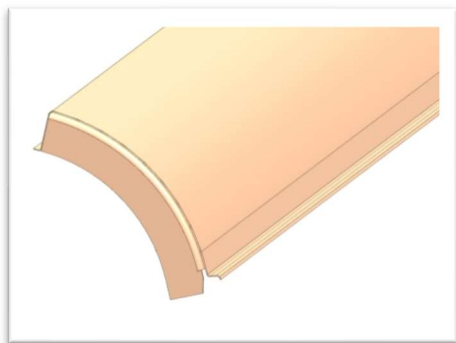
Z -section

Single piece Z-Section

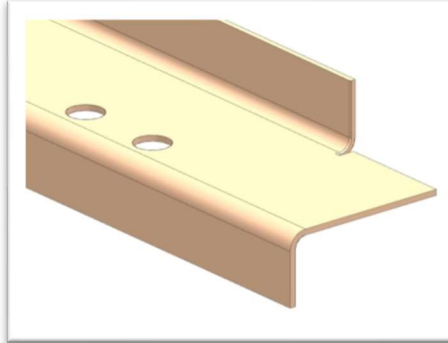
Trough floor in 4 pieces with 03 Longi.

Single piece Car line

Single piece Roof flange



**Carline**



**Roof Flange**

**Advantages**

- It will reduce the welding activities by approx. 30%.
- Considerable reduction in energy consumption.
- Tolerance of  $\pm 2$  mm can be achieved.

**Cut-in**

100% cut-in from 2018-19.

**V. Development of Non-AC Chair Car with 120 Passenger capacity**

**Coach Type**

LWSCZ

**Objective & other details**

MCF was to manufacture 75 Non-AC chair car in the year 2018-19. As this coach was being manufactured first time, all the design & drawings were collected from RCF having passenger capacity 102 with Pantry unit and 42 Non-AC chair cars were manufactured as per this arrangement. Further, MCF has taken initiative to use LSCN shell side wall window pitch to develop Non-AC chair car with 120 passenger capacity and balance 33 coaches have been manufactured with these new arrangements. In this design back to back seating arrangement has been planned as a result all the passengers are having window view. This will help Indian Railways to increase revenue.

**Advantages**

- Increase in number of seats and thus more revenue to Indian Railways
- Reduction in shell variants
- Window view available to all passengers.

**Cut-in**

Series production has been planned in 2019-20.

**VI. LWSCN in AC-3T roof profile**

**Coach Type**

LWSCN

**Objective & other details**

MCF has developed new design of LWSCN coach in AC-3T roof profile in line with standardizing the shell variants over passenger coaches.



**Advantages**

- It provides extra Head room of about 200mm for upper berth passenger.
- This new design gives more comforts to upper berth passenger.
- Standardization of roof profile and standardization of shell.

**Cut-in**

Series production has been planned in 2019-20.

**VII. GS and LSCN with wider window side wall****Coach Type**

LHB GS and LWSCN

**Objective & other details**

MCF has also adopted GS and LSCN with wider window side wall developed by ICF. This has enabled MCF to discontinue vertical sliding FRP window which was extensive maintenance prone to replace with Aluminium horizontal sliding window unit. These windows will have better aesthetics and longer life with inbuilt window bar. This has facilitated standardizing the body shell for AC and Non-AC coaches.

**Advantages**

- This design will result in enhanced passenger comfort as it gives better view.
- It also makes its manufacturing easy as it removes requirement of process of forming of side wall sheet and welding of bars.
- The welding requirement also gets reduced causing energy saving.

**Cut-in**

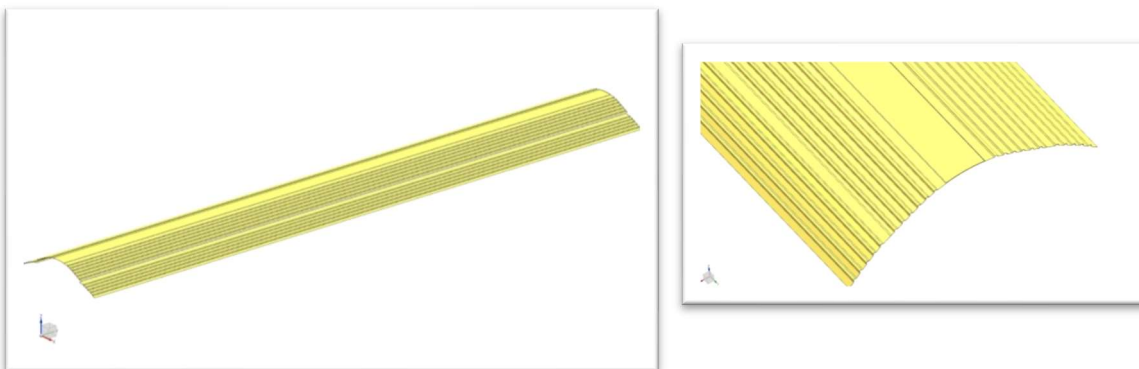
Partial cut-in has been planned form 2019-20.

**VIII. Redesign of LWACCN Roof****Coach Type**

LWACCN

**Objective & other details**

MCF has developed new design of roof of LWACCN coach. The existing design of roof has 05 longitudinal joints & several horizontal joints. The new design roof will have use of CRF and will have only 03 longitudinal joints with no horizontal joints. This has enabled in improving the productivity and also the aesthetic.

**Advantages**

- This design is in line with use of CRF items that results in about 40 % saving in welding and considerable saving of energy as well.
- Tolerance of  $\pm 2$  mm can be achieved.

**Cut-in**

Cut-in is being planned.

## IX. Improvement in flexi coil spring

Coach Type

All coach Springs and suspension

### Objective & other details

There has been continuous problem of breakage of primary and secondary suspension springs and all failures are from the very first active bottom coils due to rubbing with inactive coil and loosing the paint film and thus having pitting corrosion. In order to overcome the failure of breakage of coil springs, MCF has taken initiative to upgrade the parameters of RDSO specification as detailed below:

- Raw material 52CrMoV4 only from RDSO approved sources
- Raw material & finished spring inspection by RDSO
- Anti-corrosion & anti-chipping coating to MCF spec no. MMDTS 18015 Rev-01
- Anti-friction coating (Molykote) at top and bottom two coils.
- Material supply in pallet form as kit per bogie.
- Mating parts i.e. centering disc coated with Anti-friction coating ( for example Molykote on mating



surface).

### Advantages

- Anti-chip coating protects the spring from rusting.
- Reduce the chances of breakages due to paint peel of and crack propagation.

### Cut-in

100 Cut-in planned with immediate effect. RSK has also been advised to adopt this for MCF supply.

## X. WET on WET painting system

Coach Type

LHB coaches

### Objective & other details

MCF has introduced Wet on Wet painting system to reduce painting cycle time to increase production of coaches, including 06 years warranty on gloss value & colour retention of paint. Application methods are as under:

- In Wet on Wet painting system after application of surfacer coat, top coat is applied in Wet on Wet conditions without allowing drying of the surfacer coat. In this process; No primer is applied. With the reduction in painting cycle time from 90 hrs (in existing painting system) to 56 hrs of painting cycle time in modified painting cycle with 06 years of warranty on gloss value and colour retention is achieved.

### Advantages

- As per Specification MMDTS 18012 Rev-Nil **cycle time** for painting of LHB Type AC coaches has been **reduced** from **90 hrs to 56 hrs**.
- As per Specification MMDTS18034 Rev-02 **cycle time** for painting of LHB coaches has been **reduced** from **90 hrs to 27 hrs for both AC and Non-AC coaches**.

### Cut-in

100% Cut-in from 2018-19.

## XI. Thermal cum Sound Insulation material

**Coach Type**

LHB AC Coaches

### Objective & other details

MCF has replaced existing sound insulation paint and glass wool based Thermal insulation with Thermal cum Sound Insulation material to reduce application time & total cost of painting.



### Advantages

- Long lasting insulation material – No degradation in insulation values even after 20 years.
- Complies with the most stringent fire test standard EN 45545 for safest fire rating.

### Cut-in

Trial procurement for 150 coaches has been initiated.

## XII. Modular Seats and Berths

**Coach Type**

LWACCN, LWACCW & LWSCN

### Objective & other details

MCF has taken initiative to develop Modular design concept of Seats and Berths to over-come the time-consuming activity of replacement of Seats and Berths in a coach during POH which requires dismounting of the berth from the coach for replacing the cushion and upholstery. In the Modular Seats and Berths design, complete set of Seats and Berths can be replaced without dismounting the berths from the coach.



### Advantages

The integral and Modular Seats consisting of Upholstery & Cushion gets replaced without removing the Berth-frames. It will provide ease in maintenance to User Railways.

### Cut-in

Trial procurement for 100 coaches has been initiated.

## XIII. Improvements in Lavatory

MCF has taken initiatives for improvements in lavatory. Major modifications carried out in lavatories are as under:

- Height of lavatory pan has been increased by 30 mm.
- Venturi type toilet ventilation system has been provided in lavatory side wall below hopper window for better ventilation in lavatories of coaches.
- Existing hopper windows has been replaced with louver type windows. In AC coaches partially Louvered windows have been provided in upper part of hopper window and in Non-AC coaches fully Louvered windows have been provided.
- Material of inside wash basin has been changed to Corean as per MMDTS 18008.

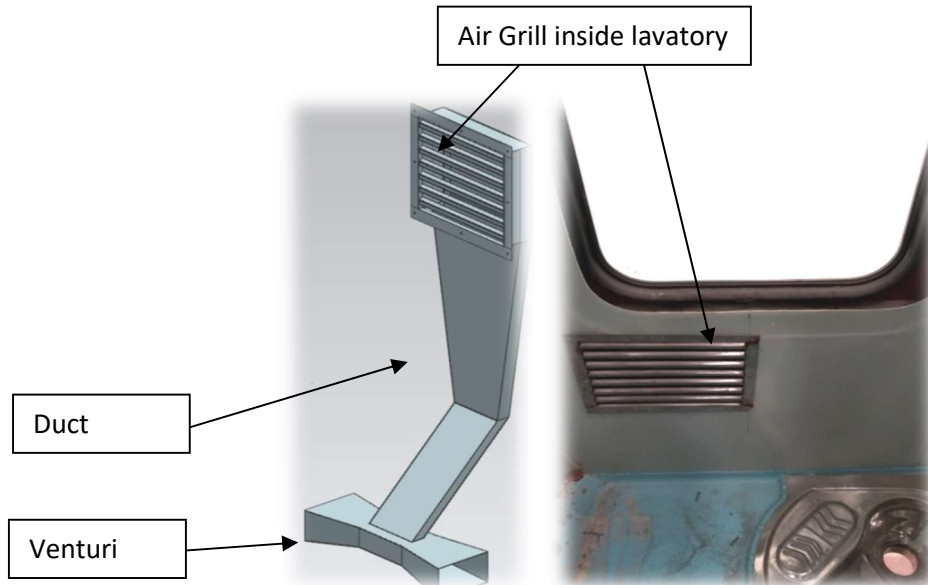
**a) Venturi**

**Coach Type**

All LHB Coaches

**Objective & other details**

Venturi type toilet ventilation arrangement has been installed below hopper window for better ventilation in lavatories of coaches. It works on concept of venturi draft suction i.e fast moving coach will create low pressure inside the duct and finally removes the air inside the lavatory to outside the coach.



**Advantages**

- Easy removal of foul smell prevailing inside lavatory with aid of natural draft ventilation.
- Absence of any mechanism also makes it maintenance free and robust.

**Cut-in**

Material for 100 coach sets has been received in MCF and is under installation process.

**b) Louver Window:**

Existing hopper windows is replaced with louver type window.

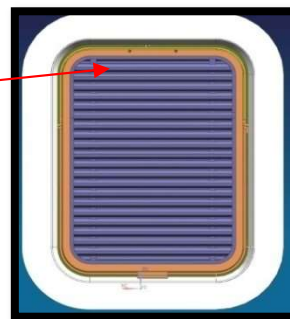
**AC coaches-**

In AC coaches louver is provided in upper part of hopper window.



**Non-AC coaches-**

In Non-AC coaches louver has been provided in whole hopper window.



Louvers

**Advantages**

- With provision of louvers, better ventilation is achieved and foul smell is effectively removed from the lavatory.
- With the increase in end wall exhaust fan capacity from 450 CMH to 625 CMH, the lavatory exhaust system is further improved eliminating the foul smell.

**Cut-in**

100% cut-in planned from Year 2019-20

**c) Improvement in lavatory pan and floor****Coach**

All LHB coaches

**Objective & other details**

Lavatory pan height is raised by 30 mm above lavatory floor

Positive water drainage slope of 40 mm is being provided in floor of Lavatory module



Raised lavatory Pan

**Advantages**

- With raising the lavatory pan from lavatory floor chances of getting chemicals and detergents into the bio tank along with cleaning water are eliminated thereby saving the bio tank bacteria from attack of chemicals.
- Due to positive slope of 40mm in lavatory floor, towards the lavatory floor drain hole, lavatory floor remains dry at all times.

**Cut-in**

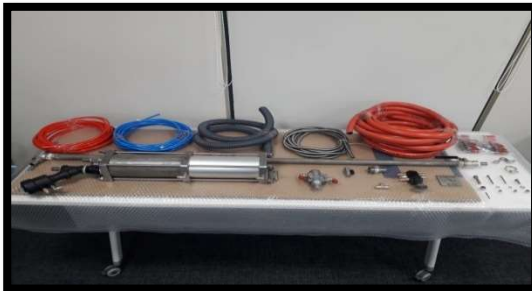
100% cut-in from Year 2019-20

**XIV. Pressurized Flushing Equipment's****Coach Type**

Non-AC coaches

**Objective & other details:**

The effectiveness of existing flushing system is not sufficient to ensure complete cleanliness of the lavatory pan due to inadequate velocity of flushing water. Pressurize flushing system ensures complete and instant flushing of lavatory pan ensuring complete cleaning.

**Advantages**

- Pressurized flushing system can be retrofitted within the existing space envelope.
- This system is capable of cleaning the bowl by effectively transferring the fecal matter to Bio digester tank with minimum water consumption.
- Maximum water consumption/flush has been ensured to be 1.5 Ltrs.
- It can be operated with the push of an electric button, hence very user friendly.
- The design is very simple, robust & requires minimum maintenance.

**Cut-in**

100% cut-in has been planned from Year- 2019-20.

RDSO has issued CAI to Railways for provision of Pressurised Flushing system in LHB type coaches vide RDSO letter no. MC/CB/LF/Anaerobic dated 25.04.2019.

## 2. New Variants of coaches

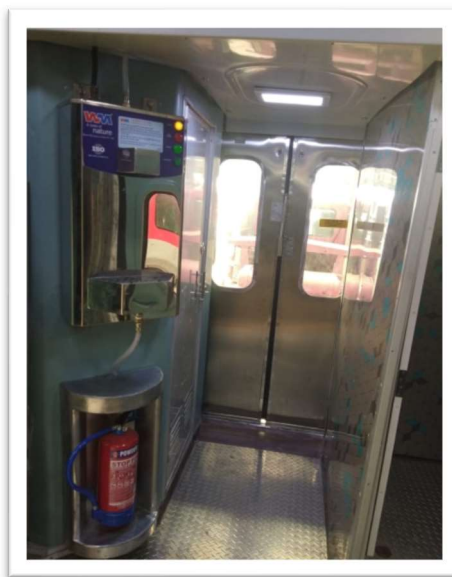
### I. Upgraded Non-AC chair Car

MCF has manufactured new coach variant of upgraded non-AC chair car coach (LWSCZ) with following features.



#### Improved furnishing –

- ✓ Textured modular FRP roof panels
- ✓ Textured modular sidewall panels
- ✓ luggage rack with ventilation slits
- ✓ Improved seats
- ✓ Modular FRP lavatory module



**Vacuum evacuation system in bio-toiles** -For improved flushing and hygiene

**Water purifier** - To provide clean drinking water to passengers

#### Provision of Mini Pantry

- ✓ Deep freezer
- ✓ Bottle cooler
- ✓ Hot water boiler
- ✓ Work table with sink and cup board

### II. AC Hot Buffet Car

MCF has manufactured new coach variant of AC Hot Buffet Car Coach (LWCBAC) with following features



MCF has rolled out its **first AC Hot Buffet Car Coach (LWCBAC)** on **29.01.2019** with following features:

1. This coach is having upgraded austenitic steel counter.
2. Deep freezer, Refrigerator, Water cooler, Hot Water boiler, Veg & Non-Veg hot case, Water purifier and smokeless multipoint hot cooking range.
3. It is also having **15 berths** for crew/staff of pantry car.
4. This car is equipped with **fire detection and suppression** system.



### **WATER BOILERGEYSER**

### **III. Track Recording Car and Track Recording Staff Car Coach**



### **Track Recording Car**

The General arrangement drawing no. TY90007 alt-c has been followed with following modifications:

- i. Coupler arrangement (Item 7) QPC -2 as per RDSO specification RDSO/2009/CG 22 rev-01 to be used instead of 1 10113.0.05.000.001 and spec C-K009.
- ii. Side buffer BG (QPC-2) to be used as per drg. No. MI004277 alt-a
- iii. Welding parts complete on Underframe: Drg. No. TY11119 alt-nil has been modified with provision of mounting of Bio-retention tank QPC-01.
- iv. Bio retention tank (QPC-01) has been used instead of CDTS : CDTS (item no.9 of drg no. TY63117 Alt-nil) as per RDSO/Spec C-9906) has been deleted and Bio-retention tank to be used as per drg.no. MI006418.
- v. Furnishing plate drg. No. MCF-LE64102 alt-b to be followed in lieu of drg.no. LE64103.
- vi. Builder plate (QPC-02) drg.no.MCF-LE64101 has been followed.
- vii. Smoke detection and fire alarm system has been installed as per RDSO specification RDSO/2008/CG-04 Rev-04.
- viii. Additional suitable locking arrangement for doors of cabins/compartment from outside has been provided for security.

Modified drg.no. MTY90001 alt-nil is being used with above modifications instead of TY90007 alt-c.

### **Track recording staff car**

The General arrangement drawing no. TY90008 alt-d has been followed with following modifications:

- i. Welding parts complete on Underframe: Drg. No. TY11141 alt-nil has been modified with provision of mounting of Bio-retention tank.

- ii. Bio retention tank (QPC-02) has been used instead of CDTS:
  - CDTS (item no.9 of drg no. TY63117 Alt-nil as per RDSO/Spec C-9906) has been deleted and Bio-retention tank to be used as per drg.no. MI006418 Alt-nil.
  - CDTS (item no.12 of drg no. TY63152 Alt-a as per RDSO/Spec C-9906) has been deleted and Bio-retention tank to be used as per drg.no. MI005710 Alt-e.
- iii. Furnishing plate drg. No. MCF-LE64102 alt-b to be followed in lieu of drg.no. LE64103.
- iv. Builder plate (QPC-02) drg.no.MCF-LE64101 has been followed.
- v. Smoke detection and fire alarm system has been installed as per RDSO specification RDSO/2008/CG-04 Rev-04.  
Modified drg.no. MTY90002 alt-nil is being used with above modifications instead of TY90008 alt-d.

#### IV. 2nd Class CumLugg. & Brake Van Compartment for PWDS (LDSLRL)

Modern Coach Factory (MCF) has rolled out its first LHB DSLR Coach on **11.01.2019**.

This coach has under slung a **500 KVA Diesel Generator Set** releasing space on board accommodating passengers and luggage. The coach has **seating arrangement of 6 differently abled** with a specially design lavatory keeping in mind the special requirement of these persons.



Besides this, the coach will accommodate **30 general passengers** in a separate area with a dedicated lavatory.

The coach has also a luggage area with **4-ton capacity**.

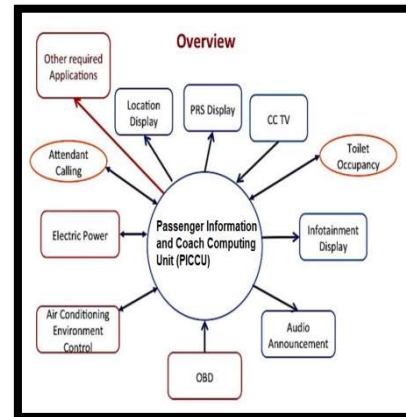
Further common under-frame has been designed which is compatible with Crompton & Greaves, Cummins and Kirloskar. Series production has been started.



### 3. Other Initiatives

#### I. SMART COACH

An initiative by Modern Coach Factory towards predictive maintenance along with infotainment and advanced passenger amenities with introduction of PICCU (Passenger Information and coach computing Unit)



#### Smart Coach features

##### PA/PIS, Passenger Infotainment, Digital destination board

###### PA/PIS:

Automated GPS based announcement triggers from PICCU using pre-recorded voice segments regarding Train Number, Train Name, Speed, Next station, running speed of train, distance remaining, expected time of arrival, delay and safety messages.



##### WI-FI infotainment system

Passengers can view Movies, Songs, Videos, Play Games and also view journey progression on their handhelds using mobile based Application.

Access on smart phones/Tablets etc. – Hot spot, enunciator, Meal on demand, Passenger complain.

##### Flush type LED Digital Destination Board displaying text in two rows

Row 1: Train Number and Coach Type  
Row 2: Scrolling text display of destination and intermediate station in multiple languages.



##### Safety and On board Coach diagnostic system

The feedback received from 1<sup>st</sup> smart coach are as follows

- Total run 11,500 miles so far, with daily run of 500 miles.
- Live location of coach & live condition of CTRB & Wheel.

- Slight increase in vibration trend with time.
- Maximum speed: 72 miles per hour & normally between 5 to 68 miles per hour.
- Average Vibrations higher than European trains.
- Both bogies showing different levels of vibration.
- Magnitude of impact increases with speed.
- Hard spot on track: Jaitipur&Goshainganj.
- TGI, Ride Index, Lateral & Vertical accelerations, Derailment co-efficient

Energy harvester-based wheel node sensors, WSP, Fire detection and alarm system.

The **Energy harvester-based sensor** monitors the condition of wheel, bearing and hard spots on the Track. The same is fed to the data concentrator and transmitted via GPS/GPRS to a remote server

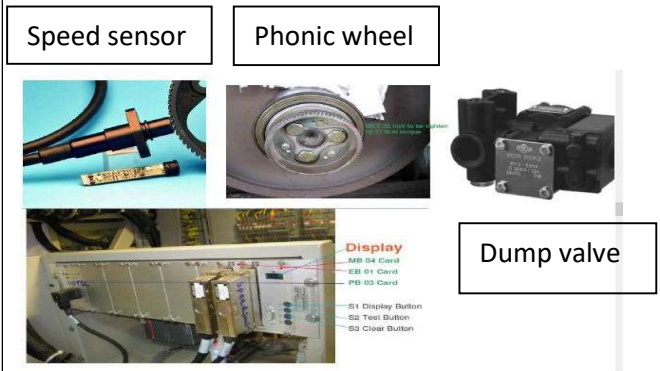
The following data can be used for diagnosis purpose:

- Health Index: Wheel health Index (WHI) and Bearing Health Index (BHI)
- Vibration Levels
- Average Power Spectral Densities (PSDs)
- Dependence between maximum vertical impact and speed
- Track Geometry Index
- Ride quality



**WSP [wheel slip protection monitoring]:**

Integration of WSPD with PICCU and posting of data live on the web server will help Railways detect faulty Dump valve, brake binding cases and prevent premature turning of wheels



**Fire detection & Alarm System:**

Fire and smoke detection unit with integration to PICCU.

**Security and surveillance system**

IP based CCTV POE camera, Face recognition, video analytics



6 cameras fitted on the coach give live recording. With PICCU footage can be accessed from control centre itself. Video analytics with face detection feature & unusual occurrence feature.

**Emergency Talkback**

It can be use to talk to Guard of Train in case of emergency for stopping the train.



**Monitoring and Control of other sub systems of coach**

**HVAC**

- ❖ Temperature & Humidity
- ❖ HEPA filter performance
- ❖ Chocked filter indicator
- ❖ Air quality index
- ❖ Power consumption
- ❖ Compressor cycle monitoring
- ❖ Fresh air monitoring



- Vacuum Toilet status**
- Water seal in lavatory**
- Exhaust Fan working**
- Working of water Pump**
- Switch board cabinet**

**Water level in water tanks:  
SMS alert to next watering station**



Water level indicator (Display)(Inside of coach)



Water level indicator (Display)(Outside of coach)

**Current Status:**

MCF has rolled out 3 Smart Coaches in 2018-19.

Further 100 coaches have been planned for which case is under TC and will be planned accordingly.

**II. Setting up design office**

**Design Library**

MCF design office has been equipped with technical library with all the relevant EN, UIC, IS, Specifications, Journals, magazines, books related to improvements/trends in rolling stock over worldwide Railway network.

## Centre of excellence

This initiative has been planned under the guidance of MRS which aims augmentation of design capabilities with procurement of all the prevailing softwares being used by rolling stock manufacturers worldwide in order to design coaches of European standards. To cater design activity MCF has been equipped with following software & hardware

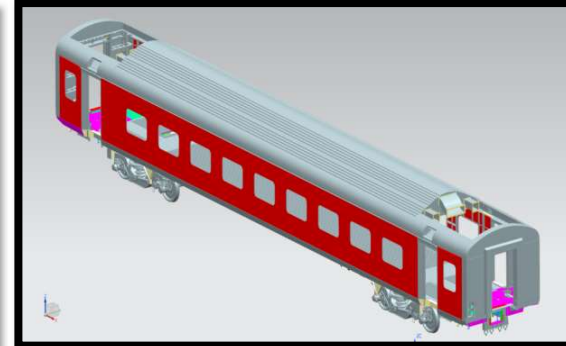
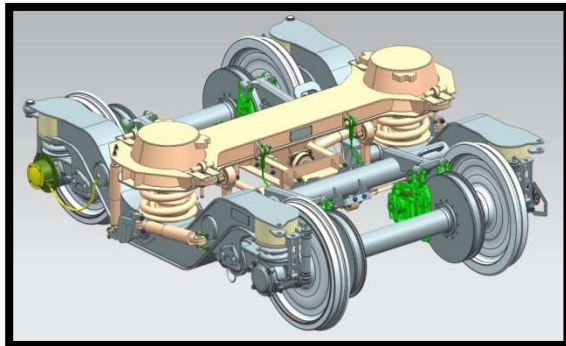
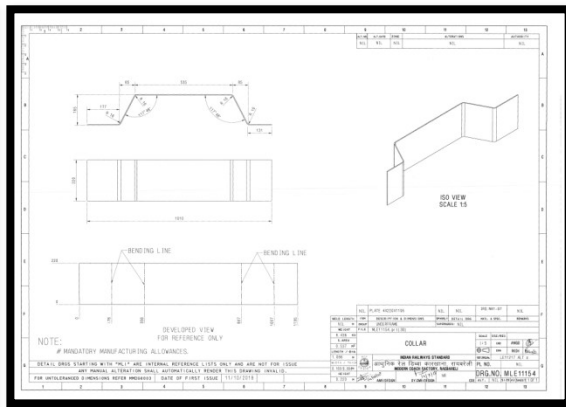
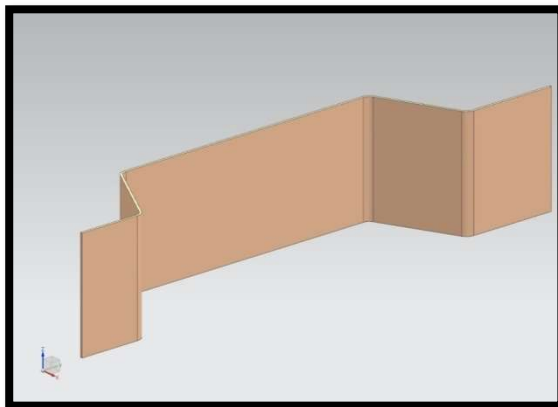
- i. Sufficient no. of workstations with siemens NX and Teamcenter & PLM licence has already been procured and installation has been done.
- ii. Multibody simulation (SIMPACK)
- iii. Crash Simulation: Hyper works & LS-Dyna
- iv. Virtual Reality setup:
- v. IETM (Interactive Engineering Technical Manual)

### III. 3D parametric model

MCF has developed 3D parametric model for LSCN coach & also in process of other variants whose production is being undertaken or is already going on.

These parametric models will help with ease to deal with all modification going over time.

MCF has developed Bogie with Air spring with capacity of 140KN (for non-AC coaches) & 120KN (for all variants of AC Coaches)



### IV. Enhance warranty of components being fitted in LHB coaches

MCF has taken initiative to improve on the maintenance practices, MCF has decided to offer 06 years warranty for components fitted in LHB coaches being turned out from MCF.

- To begin with 39 items have been identified and advised to Stores & Planning to incorporate the same in existing POs and future POs.
- In the 1<sup>st</sup> Phase total 32 items (22 Furnishing & 10 Shell and Bogie) identified.
- The warranty period for furnishing and bogie items have been incorporated in MMIS in March, 2019.
- Also implemented in balance quantity being procured for 2019-2020.
- Further, this is being implemented in all the forth coming indents for year 2020-21 and onwards.
- RDSO to also amend warranty clause for all the specs being controlled by RDSO.
- Rubber bonded items warranty periods 3 Years only.

### V. Aluminium Body Coaches

DPR for manufacture of 500 Aluminium body coaches per annum at MCF/RBL was sent to Railway Board on dated 02.07.2018 for sanction of RS.212.02 Cr for additional infrastructure & TOT required for Aluminium car

body fabrication at MCF. DPR has been duly vetted by associate finance for detailed estimate of Rs.212.02 Cr. Including cost of TOT of Rs. 150 Cr.

Railway Board vide its letter no. 2018/M(C)/137/2 dated 09.01.2019, has sanctioned Rs. 150 Cr. for the work “TOT for Design, Development, Manufacturing and testing of Aluminium Body passenger coaches” under umbrella work “Up gradation of critical work centre of workshops of Indian Railways” of Plan Head 42.

Accordingly, Tender (Estimated cost of Rs.135.46 Cr.) for “**TOT for Design, Development (Prototyping), Manufacturing & Testing of Aluminium Body Passenger Coaches at MCF, Raebareli**” has been published on 26.04.2019 for BG Loco-hauled coaches (08 nos.) and SG (Standard gauge) Metro coaches (03 nos.) and design for BG Self propelled coaches to enable MCF to manufacture Train sets consisting AC Chair Car, AC Executive Chair Car and AC Chair Car cum Driver/Guard Cabin with design speed potential of 225 KMPH.

The tender is **has been opened on 17.05.2019 and LOA has been issued to M/s DAWONSY, Korea** through its authorized Indian representative **M/s R.T.Vision on 22.06.2019.**



## VI. DPRS

MCF has planned to manufacture indigenously self-propelled coaches operating on 25 KV AC drawn from OHE lines and IGBT based 3 phase AC Propulsion System and controls for Metro & MEMU train sets annually. Accordingly, MCF has prepared schedule of technical requirement for procurement of propulsion system through tendering for:

- i. BG AC DPRS (Operational Speed 160 KMPH and compatible for 200 KMPH): Quantity-400 nos. with 50% powering.
- ii. SG Metro Train Set (Operational Speed 80 KMPH) Quantity- 3 train sets of 6 Cars each (18 coaches) with 67% powering.



### DPRS Metro coaches

The case has been dropped vide Railway Board letter no.2018/M (PU)/1/1 dated 02.07.2019. Further RDSO have to prepare specification for procurement of propulsion system for above project.

**VII. Further Improvements in lavatory**

**a) Receipt of supply of Vacuum assisted flushing (expected by this week end) cut in for planned**

**Coach Type**

AC coaches

**Objective & other details**

This vacuum evacuation system will transfer the fecal matter from the toilet pan to the bio-digester tank by positive suction and also clean the lavatory open with pressured water jet/nozzle automatic.



**Advantages**

Lesser consumption of water

**b) Collapsible Aluminium pipe is to be replaced with Rigid PVC pipe**

**Coach**

LHB AC Coach

**Objective & other details**



**Advantages:** for ease in maintenance

**Cut-in:** Prototype fitment has been done.

# Plant



## 1. OBJECTIVE OF PLANT DEPARTMENT:

- Maintenance of all CNC , Non-CNC machines ,EOT cranes, Hoists, Jib cranes, wire rope, & slings, Traversers, Lifting jacks, Transfer trolleys, compressors, blasting machines, painting machines, Industrial and transport vehicles and various others equipments.
- Maintenance and safety measures of LPG installation, Gas bank, Testing rigs and weigh bridges etc.
- To draw and implement periodical preventive maintenance schedules.
- Planning and procurements of maintenance spares (Mechanical & Electrical).
- Calibration of measuring Instruments of the working area and traceability to national/ international standards in calibration.
- Maintenance of electronic and electrical equipments of all Machinery & Plant including material Handling equipments
- Planning and procurement of spares for the electronic and electrical requirement of Machinery & Plant including SRM items.
- Calibration of Electrical & electronic instruments of the working area and traceability to national/international standards in calibration.
- Industrial Safety and to identify safety provisions required on M&P's and to ensure their compliance.
- Working and deployment of Firefighting equipments and sensitization of staffs.

- To identify instructions for safe working of operations/users/visitors and to display them on equipments and plants prominently.
- Implementation of ISO standards like: ISO 3834:2005.Green Co, ISO 22163 (IRIS), NABL, 5S etc. and others in Plant area.
- Implementation, operation and providing training of Industry 4.0 in MCF.

## **2. OVERVIEW OF PLANT DEPARTMENT:**

### **2.1 STAFF SUMMARY**

<b>Types of staff</b>	<b>Total Number</b>
Senior Supervisor (SSE)	15
Junior Engineer (JE)	13
Sr. Tech	14
Tech-I	21
TECH-II	35
Tech-III	31
Helper	13

\*Complete Staff list attached as Annexure-A

### **2.2 Machine Summary:**

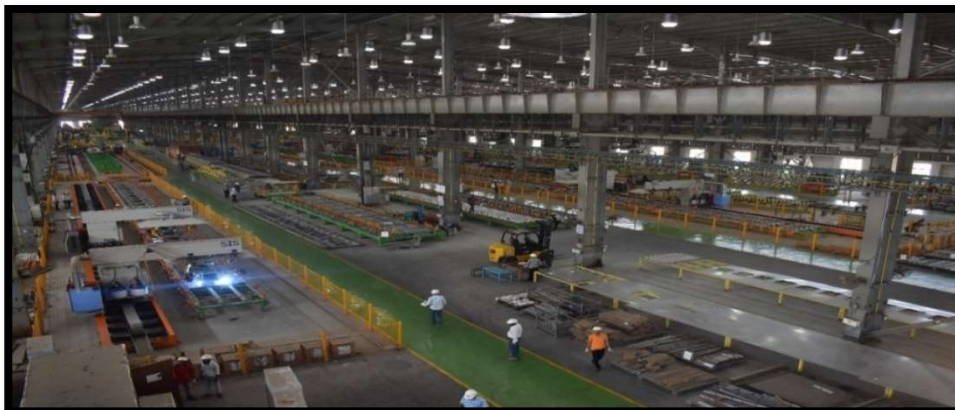
Total machine = 1120

<b>Types of Machines</b>	<b>Number</b>
1. CNC Machine	74
2. Non CNC Machine	67
3. Crane and sling	166
4. Laboratory installations	28
5. Materials handling Equipments	415
6. Transport Vehicles	124
7. Welding sets	247

\*Complete Critical machines list attached as Annexure-B

**2.3 SHEET METAL SHOP:** The latest technology machines like Laser Cutting Machine, Laser Cutting & Welding Machine, CNC Press Brakes, CNC Hydraulic Press, stretch bend forming machine have been provided to manufacture shell components with highest quality and repeatability.

**2.4 FABRICATION SHOP:**The fabrication shop has been provide with four integrated Robotic lines for manufacture of under frame, sidewall, roof and end walls using high quality Fanuc Robots for MIG welding and Spot welding. Also B&C spot welding machine is available for side wall and roof welding using electrode type welding.



**2.5 SHELL SHOP:** Side wall, under frame, roof and endwalls are further assembled together on a Robotic cathedral Jig having flexible arrangement to assemble the shell and provide access to robotic arms to complete welding work automatically.

Skin tensioning machines have been provided to straighten the skin and prevent drumming effect.



**2.6 BOGIE SHOP:** In the Bogie Shop major machines such as Plate Straightening Machine, Under Water Plasma Cutting Machine for cutting of the various plates in profiled shapes, edge milling machine, painting line, plate blasting machine etc. have been installed. Plasma cutting machine is provided with angular cutting facility to reduce machining for edge preparation.



In this shop an automatic bogie frame, bogie bolster manufacturing line with a set of welding robots are working in tandem with automatic guided material movement (AGV), where complete welding of the bogie frame and bogie bolster is done automatically through 8 numbers of the robots. Further, conveyerised bogie blasting and bogie painting line has been set up for efficient painting of the bogie frames and bogie bolsters. For machining of the bogie frame and bogie bolster 6-axis bogie machining centre and bolster machining centre has been provided. The final qualities of the bogie frame and bogie bolster are ensured by checking all the critical dimensions on 3-D Co-ordinate Measuring Machine in a single setting.

**2.7 WHEEL SHOP:** Wheel Line is totally automatic line where various stations work in tandem with synchronised gantry to perform all the machining operations on axel and wheel disc. Ultrasonic and Magnaflux testing, axel washing and auto dimensions measurement for matching the dimensions, pressing of wheel discs and brake discs have been also provided. Portal wheel lathe and wheel balancing machine are provided for maintain final geometrical dimensions and balanced wheel sets.

From this line one wheel set is produced in 18 minutes with minimum human interface.

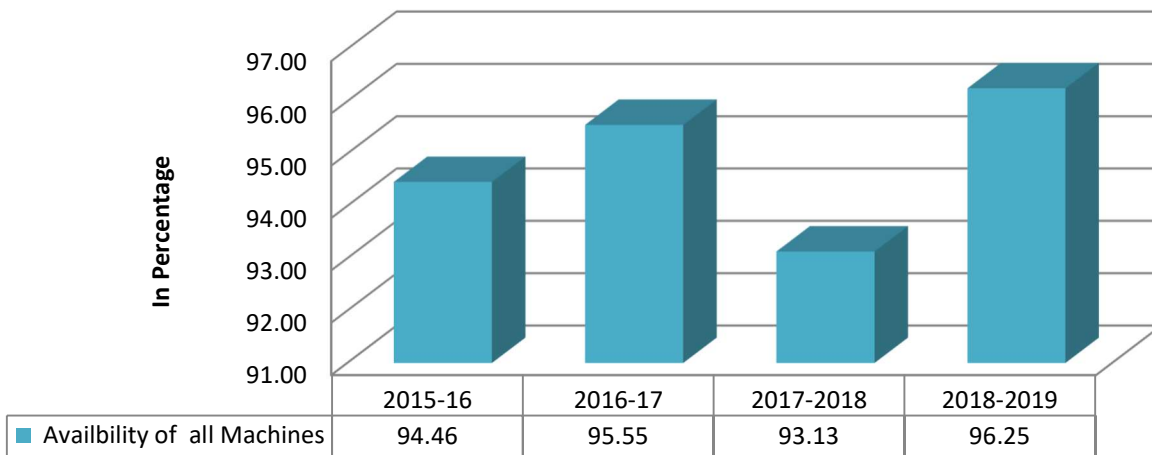


**2.8 PAINT SHOP:** Paint shop has been provided with the semi-automated painting facilities i.e. semi-automatic painting booth with environment control. PU painting is being done with electrostatic guns for airless spray painting and LPG ovens have been installed for drying painted coaches for achieving high level of productivity. For meeting environment and pollution control norms, integrated ETP plant has been provided.



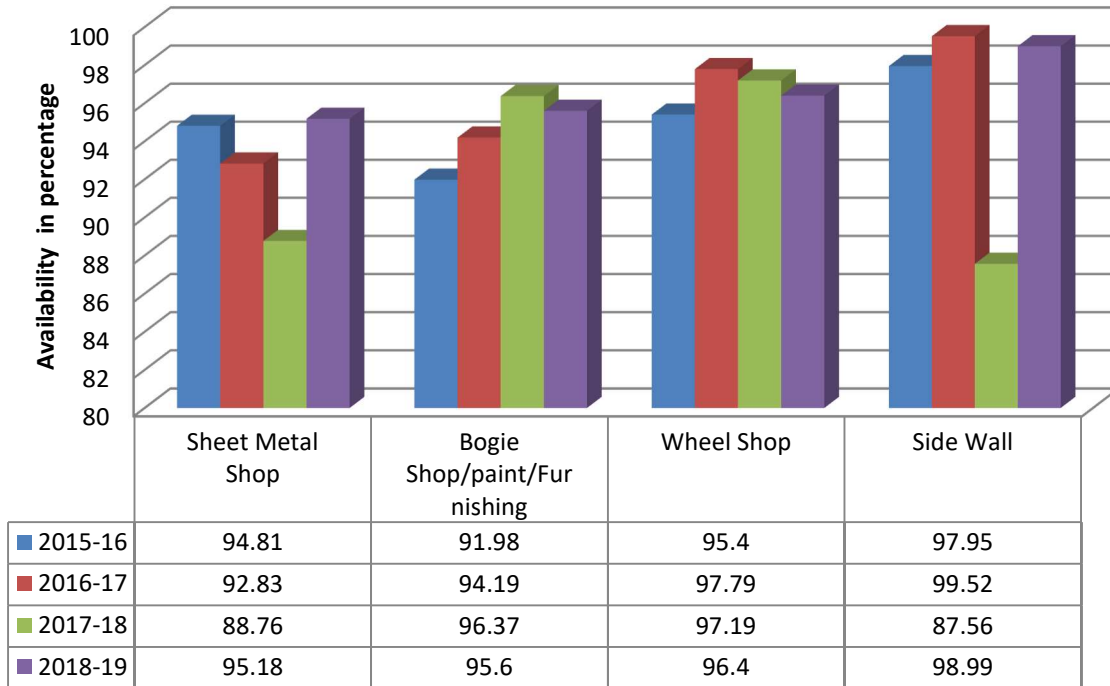
**3.0 PERFORMANCESUMMARY OF PLANT DEPARTMENT:**

**Availability of all critical Machines (64 nos.)**



\*Complete Critical machines list attached as Annexure-B

### Availability of machines group wise



## 4.0 INNOVATION, IMPROVEMENT & ACHIEVEMENTS:

### 4.1 SHEET METAL SHOP:

- 1) **Laser cutting machine-II:** The machine until recently used to run in manual mode for loading unloading input/output materials but after necessary programming changes, is now working in auto mode. This has improved productivity of machines.
- 2) **Stretch bending & forming machine:** the jaw mushroom of the machine was worn out and caused breakdown. The AMC firm informed the M&P dept. that the new spares will be available after at least 20-25 days. But the M&P staff “machined” the defective part & now the machine is running properly, thereby increasing the availability of the machine till the new spares arrived.



### 4.2 SHELL SHOP:

1. Robotic Shell Assembly line RH side slave robot was damaged due to which machine was not giving production and even it was not commissioned by Project. The task was given to M&P TO repair it and accordingly on priority required spare identified and procured and now the machine is under regular production.



- Earlier, we did not have the batteries of robot because of which, many breakdown arises in robots, Now we have procured the battery and as soon as battery low alarm arises, we change the battery and robots do not go into the breakdown otherwise again recalibration of complete system is required due to lost data.
- The robot's chiller pump /shaft was frequently getting damaged, after inspection it was found that chiller coolant was not changed for a long time only the top up was being done thereby dust particles were deposited in coolant and the pump was getting damaged. Now coolant is being changed in every 3 months. Also, it was seen that shaft of pump was made of plastic which was changed by Brass and thereafter shaft broken problem have been resolved.
- Gun return current tip of B&C Robotic spotwelding machine was swivel type, which causes frequent damage and also causes leakage of chiller coolant. For reduction of breakdown, swivel type tip was replaced by solid tip and now this hence problem is resolved forever.



**Swivel Type Tip**  
←  
**Solid Type Tip**  
→



- Robotic Shell Assembly line RH side slave robot was damaged by collision between robot and EOT crane because of mishandling of EOT crane, hence machine was not giving production for a long time, it has been repaired by M&P and now further to avoid collision an extra safety feature with laser beam circuit has been installed which will start production warning through light and sound alarm in advance in event of approaching anything towards robot beam.



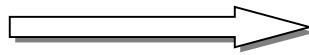
#### 4.3 BOGIESHOP:

- Reduction in blasting time of bogie frame and bogie bolster:** (bogie frame and bogie bolster blasting & painting system): During blasting of Bogie frame & bogie bolster, blasting system was taking 40 to 45 minutes per job and was a major bottle neck in meeting production requirement and thus a study was done and an action plan for reducing the time duration of blasting of bolster. Changing made by wheel liner, replacing both air blower pipes, changing all brushes, all interior portion cover with new rubber sheets. With this changes blasting time new reduce to 25 to 30 minutes in place of 40-45 minutes.



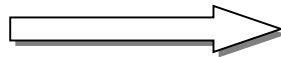
2. **Problem of deposition of cut metal on Under Water Plasma machine:** Due to deposition of cutting material over cutting table (fins) Tool Collision problems occur frequently. This Tool Collision problem was removed by changing water in weekly scheduled and cleaning deposit of cut metals at initial stage itself to prevent built up.
3. **Moisture Problem in Pneumatic line (U/W plasma):** There was problem of moisture catching up in Pneumatic Line. The issue was scheduled and new air dryer fitted on both machines and automatic moisture drain system activated in machine so pneumatic line and pneumatic valve choking problem has been stopped.

Draining arrangement made automatic lead to now over flow hence moisture reduced



4. **Fixture position (Bed Milling Machine):** Fixture position of bed milling machine has got disturbed during loading and unloading process and tool testing and accuracy problem were noted. After through investigation fixture shifting was identified and same has been rectified and also with a checking of all fixture foundation during weekly scheduled introduced and Location of fixture is also marked through punching on the bed.
5. **Fins Change (U/W Plasma):** Fins changed in time to time for better and smooth cutting in machine.
6. **Bearing replaced in track roller (Machine):** Bearing replaced in track roller of Y-axis and alignment done properly of both Y and Q axis motor for better movement of machine.
7. **Coolant deposit on Pit (BFMC):** Due to leakage in machine bed coolant leaked from bed net deposit on pit. To arrest this coolant recovery tray has been modified for smooth flow of coolant in return line.

Leaking Coolant



8. **Rectify the gas leakage line in Oxy Acetylene gas cutting machine:** Brazing of all leakage Brass pipes and done fitted with new regulator with solenoid valve for better performance of machine.

#### 4.4 WHEEL SHOP:

M&P supervisors and staff always ready to take initiative and worked hard in maintaining the machines, increasing their availability and performance. Various achievements in wheel shop are as follows:

1. **Double in production:**  
Increasing the availability of machines which in turn resulted in increase in production of wheel set from last year's 829.25 coach set to 1690 coach set in FY 2018-19.
2. **OP-220 wheel balancing machine breakdown repair:**  
Wheelbalancing machine was under breakdown on 23/01/19 due to software problem. Machine was breakdown for two days and even M/s Danobat was unable to diagnose the problem and machine was out of

warranty with manufacturer M/s Hoffman, Germany, thus manufacturer was asking the repair on payment basis. The fault was detected by M&P staff and rectified through correction in software data files.

**3. OP-200 power shaft of roller repair:**

While in operation the power shaft of the machine roller got damaged on 26/02/2019. M&P got the shaft repaired in-house by welding and turning the excess weld in tool room within 1 day and made machine working without hampering production. It also saved the revenue expenses in purchasing new shaft.



**4. OP-200 idler roller shaft repair:**

Again idler roller shaft got broken on 14/03/19. There was negligible space for welding the shaft back. Even ordering spare would take at least 4 days. M&P got the shaft repaired by welding and turning the excess weld in tool room in 1 day.

**5. OP-200 Encoder Draw Wire Broken.**

On 24/01/19 draw wire of resistance head encoder (make LIKA) got broken, spare had to procure from Italy which would take 2 weeks. M&P staff repaired the draw wire assembly by making local arrangement and made the working till arrival of genuine spare, which arrived on 31/01/19. During this period two M&P staff was always present on machine during all three shifts so that production wheel sets could not get affected.

**6. OP-60 Impulse membrane valve repair.**

On 11/10/18 inlet valve gasket of impulse membrane valve was leaking. Same got repaired through indigenous source and made machine working.

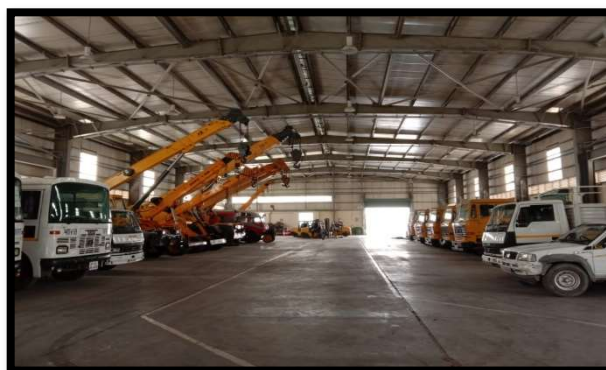
**7. Development of local sources for supply of spares, lubricants and consumables.**

Also developed many local sources of supply of spares, lubricants and consumables earlier by procured from various foreign countries, leaching reduced time of procurement, and better availability with competitive cost.

**8. Additional Work:**

- CNC pipe bending machine successfully commissioned in Tool Room.
- CNC Vertical Spindle Moulder Machine (Carpentry Shop) draw bar assembly dismantled and repaired in house.
- CNC turning center operator panel mounting arrangement modified in tool room

**4.5 TRANSPORT SHOP:**



1. Average percentage availability of Fork Lifters maintained more than 96% throughout the year.
2. For preparation of honorable Prime Minister Visit, Transport shop staffs and available equipment have been devotedly utilized round the clock for shifting materials and cleaning work etc. (mainly helipad landing area and Transport shop surrounding).

3. Two nos. of 20 ton capacity Road mobile crane were made operational, which were under breakdown since long time.
4. RRV-II was derailed on date: 10/11/2018 and damaged the front rail guide system. Required spare parts were arranged from old defective rail guide system and RRV-II made ready within one week. The cost of new front rail guide system is more than Rs. 27 Lakhs.
5. Even though MCF/RBL is having only one Tractor shunted for shunting work, due to quick and prompt attention by Transport shop, the breakdown time kept minimum to avoid any production.
6. Line no. 04 of furnishing shop was not operational and plant was given special task by GM & PCME sir to operational the line. With great effort of Transport shop staffs with cleared all old stocks available equipments.
7. For staff welfare Bus movement to LKO on every Sunday is being ensured and operational the line which is a great help in increase production.
8. Periodic schedule maintenance of Road transport vehicles are being done in time.
9. Insurance of vehicle, Fitness and pollution certificate are being maintained without trail.
10. Maintenance of Golf cart, Inspection car, and E- rickshaw is being carried out at Transport shop.
11. Maintenance of staff canteen has also been assigned to plant and being maintained to max satisfaction of users.
12. Transport shop has been maintained well cleaned and systematic even though maintenance works are being carried out with engine oil, grease, diesel etc.

## **5.0 SPECIAL WORK COMPLETED:**

### **5.1 TRANSPORT SHOP:**

RRV-2 derailed on date 10.11.2018 and front rail guide system Damaged.

**Object:** - To repair major damaged portion of front rail guide system.

#### **Action Taken**

1. After reporting of derailment RRV-2 by SSE/Shunting on 10.11.2018, inspection carried out.
2. Discussed with OEM and asked for BQ for repair of the same.
3. Firm offered BQ for more than Rs. 32 Lakhs (excluding IGST) and cycle time for supply of spares taken minimum six months as OEM is based on Germany.
4. Already one number rail guide assembly was replaced earlier in RRV-I in the year 2015 and defective assembly was kept at transport shop.
5. After proper diagnosis of complete Rail guide assembly, damaged spare parts inter changed with old assembly.
6. Trail run conducted successfully and found working normal.
7. RRV-2 was given ready on 24.11.2018 and till date it is working satisfactorily.

#### **Advantage**

1. Saved Railway revenue for more than 32 lakhs.
2. Brake down time reduced and saved production loss.

### **5.2 ENERGY METER AND FLOW METER:**

There are nine electric driven rotary screw compressor 1000 CFM (3 no IR make compressor & 6 no Godrej make air compressor) installed in MCF/RBL. All compressors have now been provided with electric energy meter & air flow meter to monitor daily electric energy consumption air consumption. At the same time machine health status also be monitored, so that coach & production should not be affected.

There was problem of water cooling in air compressor. Now 2000 liter tank has been installed in compressor room to cater continuous water supply for compressor cooling and to avoid overheating and stopping of compressor and subsequently air supply to the production. Due to this installation now the compressors is running smoothly without any problem. They are independent of water supply, now without water supply compressor can run up to 3 to 4 hours.

## 1. FLOW METER ENERGY METER

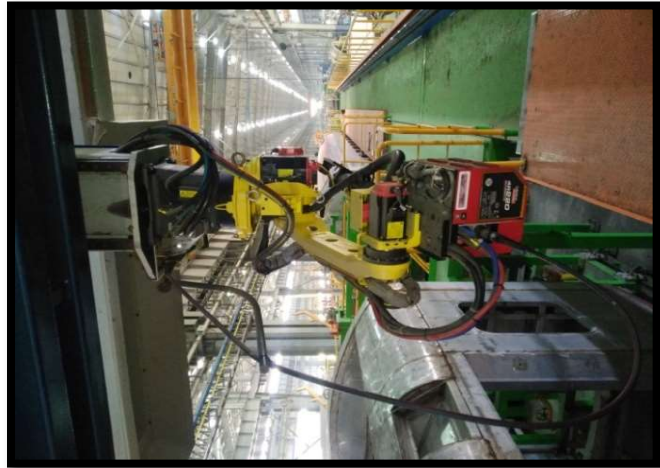


## 5.3 SHELL SHOP:

RH shell assembly was damaged by collision between EOT crane and robot, due to this machine was not available for production for a long period now machine is under production after repaired by M&P.



Damaged Robotic arm



Repaired and Installed Robotic arm

## 5.4 SURVEILLANCE & 3D MAPPING /GIS:

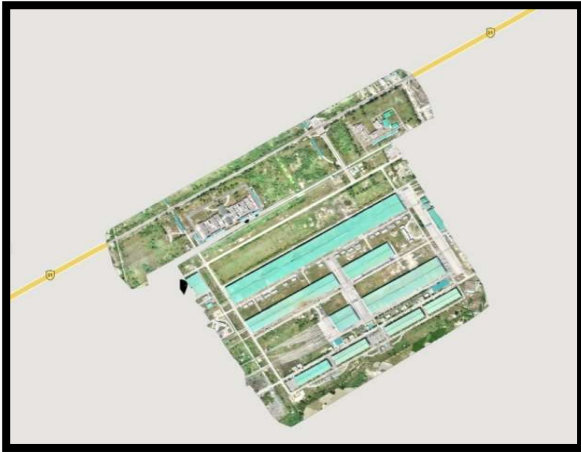
MCF is having latest technology drone & software for GIS mapping, with the help of which security concern as well as progress of project can be regularly monitored. Following are major advantage of it:

- Arial Surveillance
- Surveying
- Law enforcement by RPF
- Mapping -2D as well as 3D
- Monitoring of the project progress
- Live streaming
- High Quality image capture
- Easy Managing geographical area



## GIS MAPPING OF SCRAP YARD AND DUMP YARD:

GIS mapping of scrap yard and dump yard had been done to calculate the amount of waste and scrap accumulated there. With the help of this map area of the scrap spread had been calculated. The high as well as low density area of scrap and waste had been easily marked. This map helped to calculate the approximate amount of scrap and waste and finally segregation and disposal of the scrap and waste from scrap yard as well as dump yard.



GIS map of the factory area



GIS map of the scrap yard and dump yard

### 5.5 VEHICLE MANAGEMENT:

Vehicle management got transferred to plant from civil department and GM (G). Under this section tendering management and controlling of vehicles are being done with the use of existing staffs. Due to improvement in tender condition and distribution of service between two contractor better services is now been provided. Currently approximately 52 vehicles are running under our control.



### 6.0 INDUSTRY 4.0

MCF has become first factory to adopt Industry 4.0. Industry 4.0 will bring revolution in automation and optimum utilization of the available machines so that optimum production can be achieved.

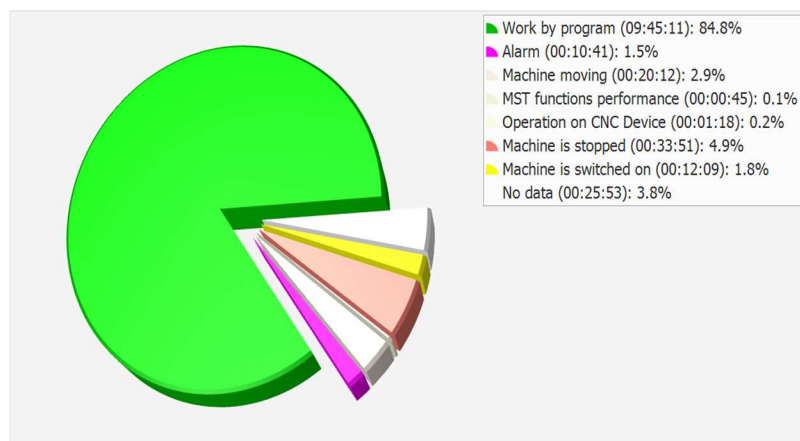
With the help of it, machines working, idle as well as break down time can be monitored. The predictive maintenance can be done with this software to maximise machine availability. Following are the main advantage of using it.

- Reliability and continuous productivity
- Machine safety
- Product lifecycles increases
- Industry value chain
- Workers education and skills
- Less down time of machines
- Optimums utilization of the resources

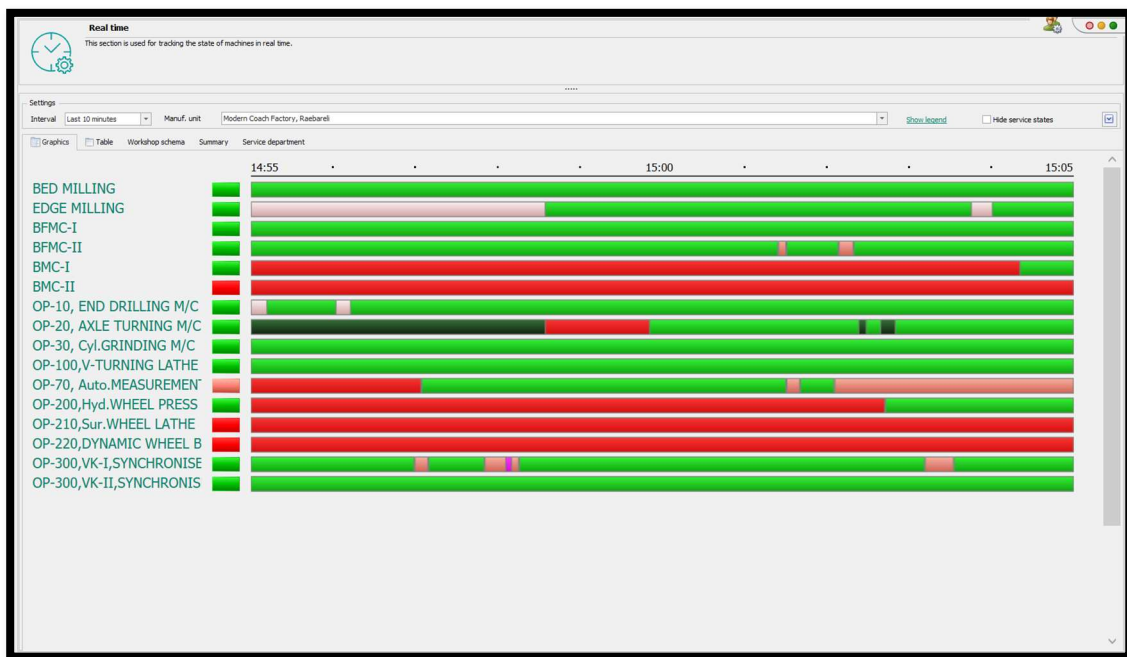
All the connected machines can be monitored from the server and the report regarding their working and utilization can be generated on various desk top computers and also it can send automated message /SMS/Email to assigned persons.

## FEATURES:

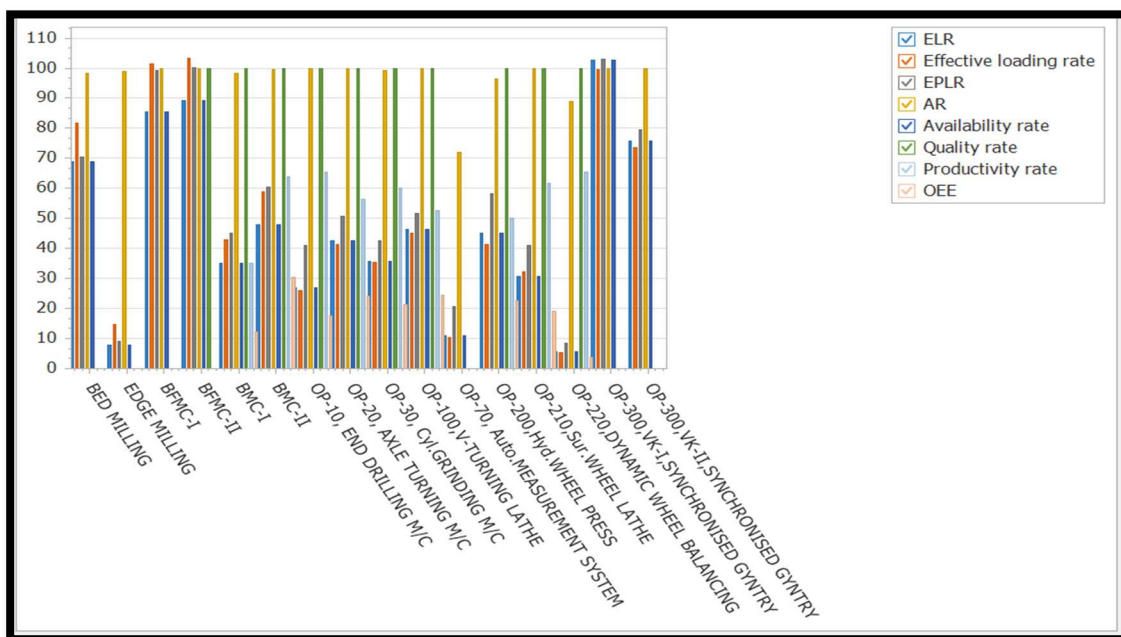
- Industry 4.0 Software is a real-time machine monitoring and manufacturing data collection system with hundreds of customizable reports and charts that can be used to track jobs, parts, operations, work centers, OEE, scrap, costs, downtime and people.
- Computerized maintenance management system.
- Energy monitoring and video monitoring
- ERP and MES integrations is possible
- Monitor equipment operation parameters and downtime (current, power consumed, temperature, speed and feeds, JOG correctors, spindle and axes load, PLC signals, etc).
- Video monitoring of production areas, option for video capture of individual events.
- Set up controlled events and notifications for appropriate company units (e-mail, SMS).
- Generate reports for company managers and units, and distribute them automatically according to a set schedule.
- Analyze trends in equipment and staff performance.
- Calculate key performance indicators (KPIs) of the equipment and staff, including OEE, as per ISO 22400-2 2014. KPIs can be calculated based on user-defined formulas.
- Monitoring of manufactured output and scrap.
- Control telemetry parameters during manufacturing output in order to reduce spoilage.
- Generate reports on manufactured output and rated time and calculate KPIs, including OEE.
- Obtain any CNC machine operation data.
- Storage of NC programs.
- Dispatch non-scheduled (emergency) repairs and maintenance.
- Schedule MRO operations based on work hours and actual states of the CNC machine.
- Control execution of scheduled repairs.
- Manage and record the work of maintenance and repair staff.
- Manage procurement for maintenance and repair services.
- Documentation support of maintenance and repair operations.
- Interaction with external service providers.
- **WORKING REPORT**



## REAL TIME CONNECTED MACHINES



## KEY PERFORMANCE INDICATOR



### 7.0 SPARE MANAGEMENT SYSTEM:

1. The master list of different machine has been prepared with minimum ware having requirement and available spare in spare cell and all master list one at place (spare shell) to monitor the availability of spares and when available quantity of spares goes below the minimum ware requirement the requisition for procurement preparing in spare shell.
2. Proper of identification of spares on rack has been developed to search required spare in minimum time.

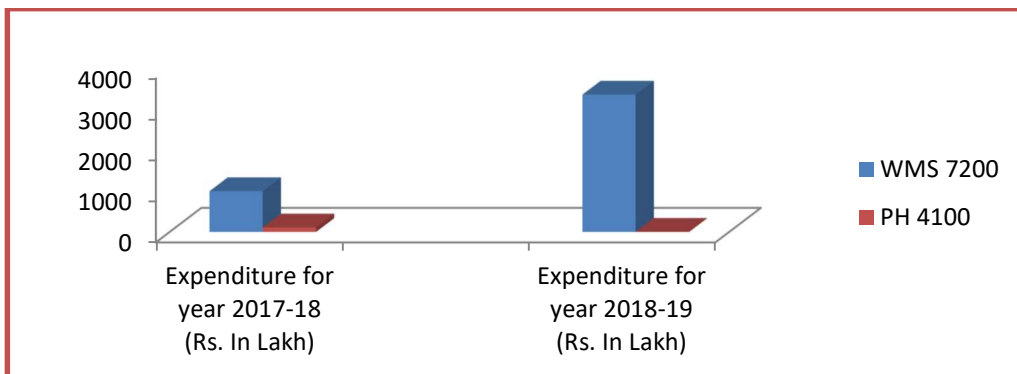
3. Google sheet of spares on Google drive has been developed so that shared person can be see the status of available in spares cell.



**Racking system of storage in spare house**

**8.0 FINANCIAL SUMMARY OF FINANCIAL YEAR:**

S.No.	Budget Sub Head	Allocation Head	WMS 7200	PH 4100
1	Contract	Expenditure for year 2017-18 (Rs. In Lakh)	997.21	108.00
		Expenditure for year 2018-19 (Rs. In Lakh)	3353.95	04.00
Total			4351.16	112.00
Grand Total			4463.16	



**9.0 SAFETY AND ENVIRONMENTAL MEASURES TAKEN BY PLANT DEPARTMENT:**

There are various safety measures and environmental measures has been taken by plant department as under :

**9.1 Safety Measures**

- Buzzer and Flasher light has been installed on Fork Lifters and Cranes.
- Proximity sensor on bogie frame machining center to avoid collision by crane hanging item to machine.
- Counseling and training of staffs for safe working is routine work also being done periodically like refresher courses, technical seminars, and safety courses etc.
- Mock drills are being organized periodically to keep system update and staffs and people alert.



Buzzer and Flasher Light installed on all Fork Lifters and Cranes



Proximity Sensor installed on Bogie frame machining center

## 9.2 Environmental Initiatives

- Green house awareness program organized to sensitize to staff towards environmental issues like global warming etc
- Cycle day was organized to spread awareness in staff to reduce per capita carbon footprint
- MCF Raebareli working towards obtaining various certifications related to environmental measures.

### Greenhouse gas awareness campaign at MW Shop



## 10. POSITION OF NEW M&P

### 10.1 M&P under PH 4100 (Railway Board)

### 10.1.1 PROCURED THROUGH COFMOW

(Cost in Lacs Rupees)					
S. No.	M&P Detail	Qty.	PO/Indent no.	Cost (in Rs.)	Remarks
1	Robotic Welding System for Bogie Side Frame & Bolster	01 no.	OP G-706440	349.58	Order placed to M/S TIESSE, DP-27-09-2019
2	Road Mobile Crane (20T)	01 no.	OP-508110, 17.08.2018	142.99	Order placed to M/S TIL Limited, DP-04-06-2019. Material received on 02/05/2019.
3	Lifting Jack (20T) (1set: 04 nos.)	02 set	ME78170059, 16.02.2018	69.89	Material collected from Jamalpur and arrived at MCF on 18/07/19.
4	CNC Robotic Spot Welding Machine	1	G-708240, 05-04-2019	3989.40	Tender opening due on 13-05-2019
5	CNC Air Plasma Cutting machine	1	OP-905940, 20.09.2018	295.68	LOA issued to Proarch, Pune.
6	Bogie Load Testing Machine (50T)	1	OP-906270, 11.01.2019	125.22	LOA issued to M/s United Engineering Corpn., B-96, Mayapuri Industrial Area Phase-I, New Delhi, Delhi-1100019.
7	Rail cum Road Vehicle 600T	1	G-805210, 11.02.2019	537.60	Tender Opened on 11.02.19. Price bid opened on 20.06.19, under final TC preparation.
			<b>Total</b>	<b>5510.36</b>	

### 10.1.2 PROCURED THROUGH MCF/RBL

S. No.	M&P Detail	Qty.	PO/Indent no.	Cost (Rs. in Lakh)	Remarks
1	Fork Lift Truck (5T)	2	09685095.R1895119, Dated 08/12/2018	24.50	Material received
2	Fork Lift Truck (10T)	2		40.50	
3	Shower Testing Plant	3 sets	758/CE/MCF/RBL/WS/STP/2018, 27.08.2018		Work under execution by EnggDeptt. Work Started on line no. 10 since 02/05/19. PDC Dec 2019

### 10.2 POSITION OF M&P UNDER PH 4100 (GM LUMP SUM)

S. No.	Approved M&P	Qty.	Consignee	Sanction Year	PO Cost (Rs. In Lacs rupee)	Delivery	Bill/ Payment	Payment date	Remarks
1	Plastic Reverse Vending machine	2	Dy. CME/C O-ORD.	2018-19	14.51	19/01/18	11.61	30-03-19	Material Received

2	Electrolyte Analyser	1	CMO	2018-19	1.12	Delivered on 31/12/18			Material Received
3	HBA1C Analyser	1	CMO	2018-19	15.05	Delivered			Material Received
4	Bogie Frame Manipulator	1	CME/P	2018-19	29.00	DP-17/04/2019			Material Received
5	Bolster Manipulator for full welding	2	CME/P	2018-19	4.98	DP-17/04/2019			Material Received
6	Side Frame Manipulator	8	CME/P	2018-19	12.98	DP-17/04/2019			Material Received
7	Virtual welding simulator	1	CPE	2018-19	33.63	03-04-19	68.95	08-05-19	Material Received
8	Intelligent Monitor MIG/MAG welding Machine	1	CPE	2018-19	12.98	26-03-19			
9	Battery operated ARC welding Machine	1	CPE	2018-19	4.13	26-03-19			
10	TIG (AC/DC) Welding Machine with digital programmable	1	CPE	2018-19	5.90	26-03-19			
11	Teach ware set (Welding set)	1	CPE	2018-19	3.54	26-03-19			
12	Portable ARC Welding Machine	1	CPE	2018-19	1.06	06-04-19			
13	Fume Extraction system	4	CPE	2018-19	16.00	06-04-19			
14	Submerged welding machine	1	CPE	2018-19	6.75	06-04-19			
15	Plasma cutting Machine	1	CPE	2018-19	2.20	06-04-19			
16	Trainer welding demonstration stand with fume extraction system	1	CPE	2018-19	25.00	13-05-19			Material Received
17	Universal testing Machine	1	CPE	2018-19	3.00	15-07-19			Material Received
18	Metallurgical Microscope	1	CPE	2018-19	2.50	-			Likely to be received in July 2019
19	Panel Saw Machine	1	CME/P	2018-19	6.37	04-05-19			DP-04/05/2019
20	Circular saw machine	1	CME/P	2018-19	3.24	04-06-19			DP-06/05/2019, DP Extended till 06/06/2019.
21	Pillar Mounted Jib Crane with Electrical Hoist (1 Ton)	2	CME/P	2018-19	19.94				TS done & sent to store on 27/06/2019.

22	Multi Station Machine (Drilling, Cutting, shearing etc.)	1	CME/P	2018-19	22.07				PO placed to M/s HMI Enterprises. DP-29/07/19.
23	Hydraulic Lift	2	CME/P	2018-19	23.68				PO placed to HMI enterprises. DP-26/08/19.
24	Ultra Sound Machine	1	CMO	2018-19	28.00				With Hospital /MCF since 08/05/19 for TS.
25	Portable welding Machine	2	PCE	2018-19	2.90				Under tendering with store.
26	Supply of Humanoid Robot (Technical interaction & services)	1 set	Dy. CME/C O-ORD.	2018-19	8.50				Specification revised. Tender opening due on 01/08/19
27	Computerised universal testing Machine (UTM), capacity 40 T	1	Dy. CCMT	2018-19	27.17				Tender opened on 22/06/19. Received for TS on 26/06/19. With store for PO.
28	Tractor shunter	1	Dy. CME/FP	2018-19	11.00				. Tender opened on 22/05/19. TS done and send to Store on 19/06/2019.
29	Door Frame Metal Detector	2	RPF	2018-19	1.54				Material received.
30	Hand Held Metal Detector	15	RPF	2018-19	0.81				Material received.
31	Micro Polisher	1	CPE	2018-19	6.10				PO placed on 19/06/19. DP due on 19/08/19.
32	X-Ray Bag Scanner Machine	1	RPF	2018-19	29.78				PO placed to M/s Kristal vision image systems Pvt. Ltd. – Pune on 24/06/19. DP due on 24/08/19.
					385.43				

### 10.3 POSITION OF M&P UNDER PH 4200:

Item description	Total number of machines required
1. Hydraulic trainer kit 2. Electro hydraulic trainer kit 3. Pneumatic trainer kit 4. Automation system <ul style="list-style-type: none"> <li>a. Laser cutting simulator</li> <li>b. Training robot with control box and teach pendant</li> <li>c. Fanuc CNC machine controller simulator</li> <li>d. Fanuc CNC machine controller software</li> <li>e. The controller identical NC programming workstation (SIEMENS)</li> <li>f. Application of pick and place arm at MCF</li> <li>g. Humanoid robot</li> <li>h. Electronic shop (diagnostic)</li> <li>i. Sensor lab equipment to make aware of the basic principles &amp; their types used in automation industries.</li> </ul>	1 set  Material recived and commissioned in March 2019

## 11 CERTIFICATIONS AND CITATIONS:

S. No.	CERTIFICATION	CERTIFICATE No.	DATED	Valid upto
1	WATER CONSENT	31793/UPPCB/Raebareli(UPPCBRO)/CTO/water /RAEBARELI/2018	22/02/2019	31.12.2021
2	AIR CONSENT	38581/UPPCB/Raebareli(UPPCBRO)/CTO/air/RAEBARELI/2018	22/02/2019	31.12.2022
3	AUTHORISATION OF HWH	7110/UPPCB/Raebareli(UPPCBRO)/HWM/RAEBARELI/2019	22/02/2019	28.02.2014
4	FACTORY LICENSE	UPFA29000017	15/03/2019	31.12.2019

## 12 ANNEXURE A:

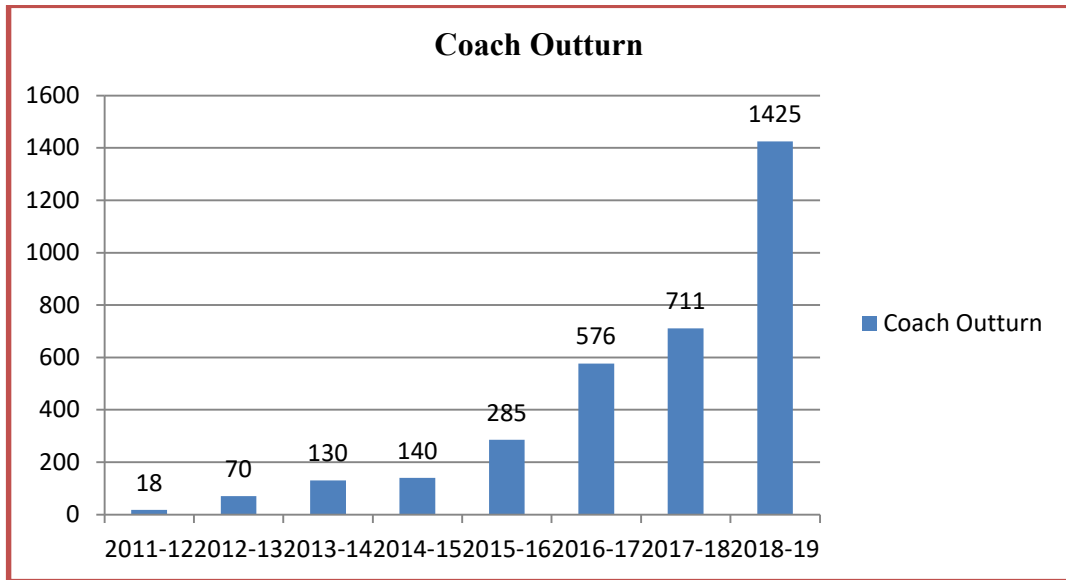
MODERN COACH FACTORY, RAEBARELI				
YEARLY BREAKDOWN AVAILABILITY %AGE OF CRITICAL MACHINES				
S. No.	Equipment No.	Equipment Description	Shop	Availability 2018-19
1	10100001	CNC HYDRAULIC PRESS BRAKE 120-Ton-I	SMS	100.00
2	10100002	CNC HYDRAULIC PRESS BRAKE 120-Ton -II (5-AXIS)	SMS	99.30
3	10150001	CNC HYDRAULIC PRESS BRAKE 160-Ton (5-AXIS)	SMS	100.00
4	10170001	CNC HYDRAULIC PRESS BRAKE 440-Ton-I (5-AXIS)	SMS	99.25
5	10170002	CNC HYDRAULIC PRESS BRAKE 440-Ton-II (5-AXIS)	SMS	100.00
6	10200001	CNC HYDRAULIC PRESS BRAKE 800-Ton (5-AXIS)	SMS	99.20
7	10500001	STRETCH BENDING & FORMING MACHINE	SMS	89.16
8	10910001	FOUR COLUMN HYDRAULIC PRESS 800-Ton-I	SMS	99.60
9	10910002	FOUR COLUMN HYDRAULIC PRESS 800-Ton-II	SMS	81.40
10	10950001	CNC SHEAR CENTRE HNC 4113 , BAYKAL	SMS	98.30
11	11010001	CNC LASER CUTTING MACHINE - I (SIS KOREA) (3-AXIS)	SMS	88.09
12	11010002	CNC LASER CUTTING MACHINE -II (SIS KOREA) (3-AXIS)	SMS	81.31
13	11020001	CNC LASER CUTTING & WELDING MACHINE-I (SIS KOREA) (3-AXIS)	SMS	95.36
14	11020002	CNC LASER CUTTING & WELDING MACHINE - II (SIS KOREA) (3-AXIS)	SMS	93.08
15	13100001	CNC FOLDING MACHINE- I	SMS	99.60
16	13100002	CNC FOLDING MACHINE - II	SMS	99.15
17	41800004	AUTOMATIC STORAGE AND RETRIAVLE SYSTEM	SMS	100.00
18	12090001	SIDE WALL ROBOTIC MIG WELDING MACHINE-I (RH)	SIDE WALL	98.05
19	12090002	SIDE WALL ROBOTIC MIG WELDING MACHINE-II (LH)	SIDE WALL	98.36
20	12100001	SIDE WALL ROBOTIC SPOT WELDING MACHINE-I (RH)	SIDE WALL	96.10
21	12100002	SIDE WALL ROBOTIC SPOT WELDING MACHINE-II (LH)	SIDE WALL	98.30

22	12110001	ROOF BEARER ROBOTIC MIG WELDING MACHINE-I (RH)	SIDE WALL	100.00
23	12110002	ROOF BEARER ROBOTIC MIG WELDING MACHINE-II (LH)	SIDE WALL	100.00
24	12120001	CARLINE ARCH ROBOTIC MIG WELDING MACHINE-I (RH)	SIDE WALL	100.00
25	12120002	CARLINE ARCH ROBOTIC MIG WELDING MACHINE-II (LH)	SIDE WALL	99.43
26	12130001	END WALL ROBOTIC MIG WELDING MACHINE-I	SIDE WALL	100.00
27	12130002	END WALL ROBOTIC MIG WELDING MACHINE-II	SIDE WALL	100.00
28	12800001	CNC ROBOTIC SPOT WELDING MACHINE	SIDE WALL	98.60
29	17010001	CNC END DRILLING, COUNTER SINKING,TAPPING & RE-CENTERING M/c (SM-2)(OP-10)	WHEEL SHOP	93.05
30	17020001	CNC AXLE TURNING MACHINE ( TCN-16-2T ), (OP-20)	WHEEL SHOP	99.21
31	17030001	CNC CYLINDRICAL GRINDING MACHINE ( HG-72 3000 S ), (OP-30) *	WHEEL SHOP	94.45
32	17040001	CNC VERTICAL TURNING LATHE MACHINE (OP-100)	WHEEL SHOP	98.37
33	17050001	ELECTROMAGNETIC CRACK DETECTOR ( OP-50 )	WHEEL SHOP	99.19
34	17060001	ULTRASONIC FLAW DETECTOR LATERAL & LONGITUDINAL ( OP-40 )	WHEEL SHOP	100.00
35	17070001	AUTOMATED MEASUREMENT SYSTEM, (OP-70)	WHEEL SHOP	84.32
36	17080001	CNC HYDRAULIC WHEEL PRESS (RP 3000 2PP) (OP-200)	WHEEL SHOP	95.46
37	17090001	CNC SURFACE WHEEL LATHE MACHINE ( DPL-2600-CNC ),(OP-210)	WHEEL SHOP	94.07
38	17100001	DYNAMIC WHEEL BALANCING MACHINE (OP-220)	WHEEL SHOP	97.56
39	17120001	SYNCHRONISED & AUTOMATED WHEEL HANDLING & CONVEYING SYSTEM, VK-I (OP-300)	WHEEL SHOP	96.38
40	17130001	SYNCHRONISED & AUTOMATED AXLE HANDLING & CONVEYING SYSTEM, VK-II (OP-300)	WHEEL SHOP	99.15
41	17140001	WASHING MACHINE (OP-60)	WHEEL SHOP	99.40
42	10180001	CNC HYDRAULIC PRESS BRAKE 700-Ton	BOGIE SHOP	100.00
43	13000001	CNC BED MILLING MACHINE FUQ150 VR/A5 (TOS KURIM)	BOGIE SHOP	85.25
44	13050001	CNC EDGE MILLING MACHINE (TOS KURIM)	BOGIE SHOP	94.60
45	14000001	CNC (UNDER WATER) PLASMA PROFILE CUTTING MACHINE-I (ITALY)	BOGIE SHOP	75.42
46	14000002	CNC (UNDER WATER) PLASMA PROFILE CUTTING MACHINE -II (ITALY)	BOGIE SHOP	95.41
47	14100001	CNC OXY-ACELYLENE GAS CUTTING MACHINE	BOGIE SHOP	97.40
48	14600001	CNC BOGIE FRAME MACHINING CENTER - I	BOGIE SHOP	83.15
49	14600002	CNC BOGIE FRAME MACHINING CENTER - II	BOGIE SHOP	94.25
50	14700001	CNC BOLSTER MACHINING CENTRE-I FUWQ 125 OR/8	BOGIE SHOP	91.25
51	14700002	CNC BOLSTER MACHINING CENTRE-II FUWQ 125 OR/8	BOGIE SHOP	95.40
52	14800002	3-D Co-ORDINATE MEASURING MACHINE-II	BOGIE SHOP	96.20
53	44010001	SHOT BLASTING & PAINTING SYSTEM (BOGIE FRAME & BOGIE BOLSTER)	BOGIE SHOP	94.35

54	44040001	PAINT BOOTH WITH MOVABLE GANTRY, SCISSOR LIFT PLATFORM, RECIPROCATION FOR PAINT Etc.	PAINT	100.00
55	44040002	PAINT BOOTH WITH MOVABLE GANTRY, SCISSOR LIFT PLATFORM, RECIPROCATION FOR PAINT Etc.	PAINT	99.10
56	44050001	AIR SUPPLY UNIT WITH AIR SUPPLY FAN, LOUVERS, BAG FILTERS, WIRE MESH BIRD SCREEN Etc.	PAINT	100.00
57	44050002	AIR SUPPLY UNIT WITH AIR SUPPLY FAN, LOUVERS, BAG FILTERS, WIRE MESH BIRD SCREEN Etc.	PAINT	100.00
58	44060001	DRYING OVEN WITH HOT AIR FAN, BURNER CHAMBER, OVEN ENCLOSURE, LPG BURNER/FLOW METER/LEAK DETECTOR Etc.	PAINT	99.50
59	44060002	DRYING OVEN WITH HOT AIR FAN, BURNER CHAMBER, OVEN ENCLOSURE, LPG BURNER/FLOW METER/LEAK DETECTOR Etc.	PAINT	99.35
60	44070001	EFFLUENT TREATMENT PLANT & DE-SLUDGE SYSTEM (SLUDGE PIT)	PAINT	100.00
61	12910001	CNC VERTICAL SPINDLE MOULDER MACHINE (BMW-C5111AE)	CARP	99.35
62	41800002	AUTOMATIC STORAGE AND RETRIAVLE SYSTEM	FURN. STORE-I (Main)	100.00
63	41800003	AUTOMATIC STORAGE AND RETRIAVLE SYSTEM	FURN. STORE-II (Main)	100.00
64	41800001	AUTOMATIC STORAGE AND RETRIAVLE SYSTEM	SHELL STORE (Main)	98.15
BREAK DOWN AVAILABILITY % AGE :				98.26

## PRODUCTION

### 1. Furnishing Shop: Exponential growth of Production



**1.1 Increase in outturn:** During the year 2018-19, Furnishing shop furnished and dispatched 1425 LHB coaches against 711 coaches furnished in the year 2017-18 which is more than double that of previous year outturn.

### 1.2 Variant-wise coach breakup:

S.No.	Coach Type	Quantity
1.	LWACCN	273
2.	HUM.	160
3.	LWACCW	87
4.	LWSCN	589
5.	LWS/DD	130
6.	LWLRRM	136
7.	TRC	2
8.	TRSC	1
9.	LDSLRL	1
10.	LWCBAC	16
11.	LWSCZ	30
<b>Total</b>		<b>1425</b>

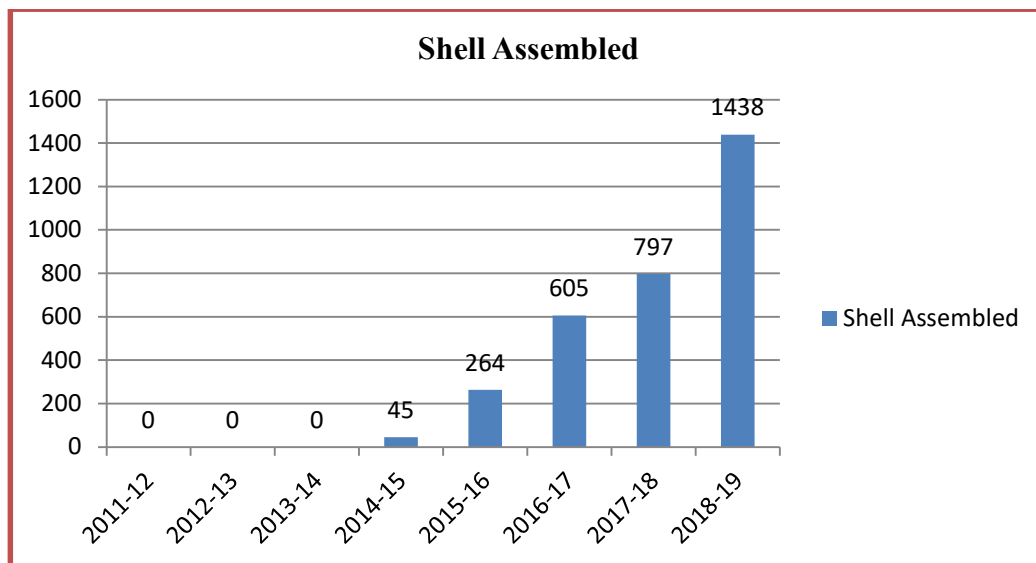
### 1.3 Other Highlights of Furnishing Shop:

- Humsafar Rake fitted with vacuum toilets dispatched to ECR in the month of May'2018.
- First Smart Coach dispatched on 30.05.2018; subsequent 2 Smart Coaches have been dispatched and are in operation at NR.
- First AC-II in AC-III envelope was manufactured in the month of November and dispatched to NCR.
- MCF achieved the highest production level of 152 coaches in the month of January'19.  
20 LWLRRM coaches are dispatched and gate out in the month of January which is highest ever.
- 3000<sup>th</sup> coach was roled out on 24.01.2019.

### 1.4 Many new variants were manufactured at MCF for the first time:

- 1.1<sup>st</sup> LWCBAC (AC Pantry Car) coach was dispatched on 13.01.2019 to NFR.
- 2.1<sup>st</sup> TRC coach is dispatched on 13.02.2019.
3. First Non-AC chair (LWSCZ) coach has been dispatched on 24.02.2019.
4. First TRSC coach has been turned out on 09.03.2019.
- 5.1<sup>st</sup> LDSLR coach is dispatched on 13.01.2019 to WCR

## 2. Shell Shop



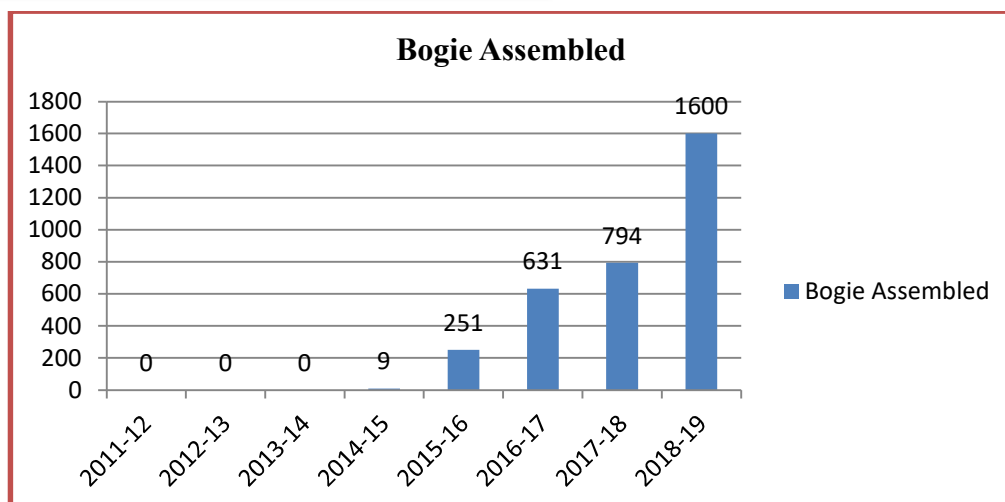
## 2.1 Highlights of Shell Shop:

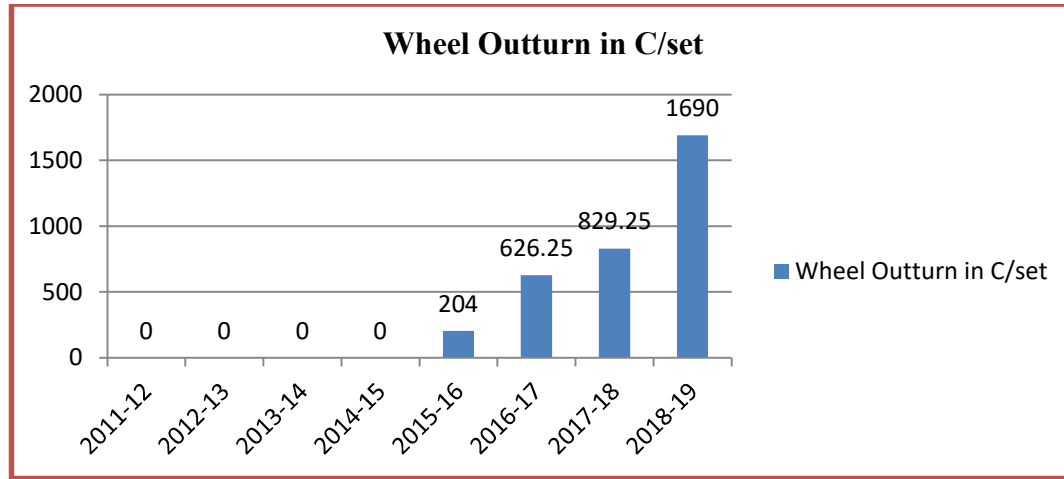
- Modification of robotic spot welding fixture and robotic programming for side wall, which increased the production of side wall from 01 side wall per shift to 02 side wall per shift.
- SIS robotic shell assembly line and under frame line was taken over by MCF for regular production in the year 2018-19.
- Highest ever shell produced in the month was achieved in the month of February i.e. 152 Shells.
- First LWCBAC Shell manufactured in the month of October'18.
- First Non-AC chair (LWSCZ) Shell in the month of January' 2019.
- 1<sup>st</sup> LDSLR Shell manufactured in the month of September'2018.
- Modular type clamping arrangement developed and implemented on sidewall framing stage-1
- Stand made for safe stacking of Lavatory side wall at LCWM-I, II.
- Brazing on sealing angle started in place of MIG welding due to which Side wall heat input decreased, appearance and quality improved.
- CRF type component like trough floor, Roof sheet, Sole bar, and Roof flange implemented. And this has resulted in better quality and increased production.

### Production of Major Sub-Assemblies at Shell Shop

Major Sub-Assembly	Year		Percentage improvement (%)
	2017-18	2018-19	
Side Wall	800	1242	55.25
Roof	367	315	-14.1689
Underframe	274	576	110.219
Shell Assembly	797	1438	80.4266

## 2.2 Bogie & Wheel Shop:





S. N	Description	2017-18	2018-19	% Improvement
1	Fabrication of Bogie Frame	310.5	505	62.64%
2	Fabrication of Bogie Bolster	419	516.5	23.27%
3	Machining of Bogie Frame	292.5	505	72.65%
4	Machining of Bogie Bolster	414	566.5	36.84%
5	Bogie Assembled	753	1600.5	112.55%
6	Wheel set outturn	829.75	1690	103.68%
7	Delivery of Bogie under RSP	33.5	121	261.19%
8	Delivery of Wheel Set under RSP	24.75	103.75	319.19%

(All position in C/Set)

### 2.3 Highlights of Bogie & Wheel Shop

- For effective utilization of machining capacity at CNC Edge milling machine, a trial was conducted, in which by the application of one more EPM Chuck the machining capacity will be increased by 27%.
- CNC Press Brake production capacity has increased from 50 C/set to 75 C/set.
- For ensuring safety, storage of compressed oxygen & DA gas, cylinder storage rack was fabricated.
- Robotic Bogie Fabrication line has started production since Oct-18. 7 out of 8 robots are working.
- Modification in Bolster machining fixture for machining of LS-5 bogie bolster.
- A trial was conducted on BFMC-I. During trial the machining time of one bogie frame was reduced from 8.5Hrs to 7Hrs, thus machining capacity of bogie frame is increased from 50 C/Set to 75 C/Set per month in 03 shift working basis.

#### Best-ever Production

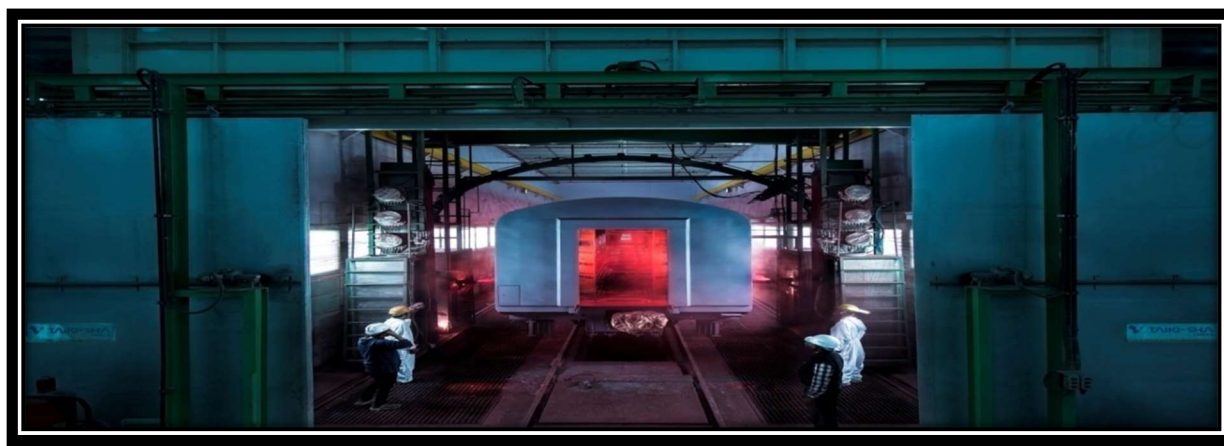
S.No	Section	2017-18		2018-19	
		Month	Production	Month	Production
1	Bogie frame fabrication	Jan-18	41	Feb-19	62.5
2	Bolster fabrication	Mar-18	101.5	Feb-19	79
3	Bogie frame M/c	Jul-17	37	Dec-18	51.50
4	Bolster M/c	Mar-18	53	Mar-19	100
5	Bogie Assy.	Mar-18	125.0	Mar-19	177.5
6	Wheel set outturn	Mar-18	104	Feb-19	212.5

(All position in C/Set)

## 2.4 Bogie fabrication line (Supplied by M/s KUKA line):

It is a robotic based (KUKA robot with Fronius welding set) system for full fabrication of Bogie frame. It has five work stations for completing almost 80% of welding work involved in an automated mode. This system is first of its kind any where in the country in any bogie manufacturing shop. The quality of welding is of very high order and consistent. On KUKA line 62.5 Coach sets of Bogie frame was fabricated in the month of Feb'2019 which was best ever month production & 79 Coach sets of Bogie Bolster was fabricated in the month of Feb'2019 which was also best ever month production. In the year 2018-19, 505 Coach sets of Bogie frame was fabricated which is 62.64% higher as compare to previous year. In the same year, 516.5 Coach sets of Bogie bolster was fabricated which is 23.27% higher as compare to previous year. Contract on TAL manufacturing solution Ltd. Pune was awarded in the month of June'2018. Scope of contract is operation of Bogie Fabrication line on pay on Production basis. Due to this contract Bogie Fabrication line restarted and production increased. A total of 7 welding robots out of 8 are now in operation.

## 3. Paint Shop:



### 3.1 Innovation of Paint Shop:

- With the use of adhesion promoting primer on shells, Garnet Blasting, is 100% eliminated.
- Wet on Wet painting system started in Paint Shop with reduced time to 56 hours in place of 90 hours in normal painting system.

### 3.2 Out-turn of Paint Shop (Coach type wise):

Sr.No.	Type of Coaches	Coach type out-turn of Paint Shop for 2018-19
01	LWACCN	291
02	LWACCN (HS)	140
03	LWACCW	64
04	L2T(T)	28
05	LWSCN	403
06	LWSCN (G)	186
07	LWSCN-M	19
08	LWS/DDG	48
09	LWS/DDF	55
10	LWLRRM	143
11	TRC	03
12	TRSC	03
13	SLR	05
14	LWCBAC	27
15	SCZ	35
16	WC (3T)	03
17	WC/LSCN (G)	02
<b>Total</b>		<b>1455</b>

### 3.3 Achievement of Paint Shop:

- 203.93% increase in paint production as compared to 2017-18 (1450 coaches painted during this period as compared to 711 of the previous year).
- 182 Shells painted in the month of January 2019 which is ever highest out-turn of Paint shop.

### Planning

- PL reduced by Kiting/Assembly from 610 nos. PL to 90 nos. PL to simplify the procurement process and reducing the paper works and finally saving the Manpower and procurement time.
- In shell section, CRF Section introduced which reduced the consumable items and saved the manpower and time. Sole bar, trough floor, connection sheet, carline, roof sheets are introduced of CRF.
- Procurement of Sidewall sheeting with window blank is ensured material availability on time by reducing manpower requirement.
- In Bogie section, Procurement of Safety items like Rubber items, Damper, spring has started in set form. Total 10 nos. stocking proposal have been prepared for procurement of other Bogie items in kit form and send to store for PL allotment of the same.
- Non Stock demands have been prepared for Kolkata Metro and MEMU.
- Furnishing of many coach variants like LWSCZ, LWCBAC, LWACCN, LWS-DD are planned on turnkey basis which helps uninterrupted production of coach in 2018-19.
- Total 242 nos. Bogie and 413 nos. wheel set have supplied to zonal Rly. under RSP in 2018-19.

### Vendor registration and directory issue work done by Planning and achievements are as:

- MCF's first vendor directory issued in July 2018 and available on MCF website for both mechanical and Electrical.
- New vendor directory has been revised and uploaded on MCF website on 15.07.2019.
- Online vendor approval work is under process. Guidelines and process for vendor approval is uploaded on MCF website.
- Total 46 nos. vendors registered in 2018-19 which is more than double in compare to 2017-18. Also capacity and capability assessment of 389 nos. vendors have conducted in 2018-19 which is more than double in compare to 2017-18:

Sr. no.	Year	Capacity and capability assessment	Vendor registration	Total
1	2017-18	189 Nos.	18 Nos.	207 Nos.
2	2018-19	389 Nos.	46 Nos.	435 Nos.
	<b>Total</b>	<b>578 Nos.</b>	<b>64 Nos.</b>	<b>642 Nos.</b>

- IRIS certification (ISO-22163) successfully implemented in planning dept. by planning team.
- Costing work of all Coach Variants done by planning department.
- Knowledge management section developed in planning department and 25 technical books is under procurement.
- Development of computerised pass section in planning office.

### Process Planning

- Issuing internal production plan for manufacturing of 1425 coaches.
- Issuing batch wise regular work order for manufacturing of coaches and monitoring it regularly.
- Issue if special work order for trade failure items/critical items.
- Monitoring of coach number generation of CMM software.

Planning department play big role in successful visit of Hon'ble Prime Minister Shri. Narendra Modi in Dec. 2018.

### Quality

#### 1. Furnishing Quality Control:

No. Of Coaches inspected	Audit inspection	Bio Tank Testing	RSC Uploaded
1425	285	1425	1425

### 1.1 Activities of furnishing quality control:

Coaches furnished at furnishing & finishing shops are inspected at stages of Floor & PVC, Window & Ceiling, Partition & Panelling, Moulding & Door, Plumbing, Lavatory and Seat & Berths with self Inspection (SIP), Quality Control Inspection (QCI), Cross examination (X-Point) and final inspection for ensuring complete quality of product.

- RSC (Rolling Stock Certificate) prepared and uploaded at MCF website for easy and early availability to concerned Railway.
- Humsafar (160 Coaches) inspected for quality of additional fitting.
- DEENDAYALU 130 coaches inspected.

### 2. Bogie Quality Control:

No. of bogie frame, bogie bolster and components measured on 3 D - CMM	QCI. of bogie frame and bogie bolster	Inspection of bogie assembly load testing
<b>437</b>	<b>429</b>	<b>2219</b>

### Activities of bogie quality control:

- Bogie fabricated at bogie assembly inspected thoroughly in accordance with SIP (self inspection Performa) submitted by production.
- Screws are checked for proper torque and air brake pipe fitting are also checked.
- Bogie final assembly is inspected for load testing.

### 3. Activities of wheel quality control:

- Machining of axle and wheel and their fitment is observed at all stage of wheel and axle line.
- QC has advice to adjust the roughness value of axle sitting area in grinding machine for better interference fitting. This resulted in no use of emery paper for getting roughness, saving of time and man hours along with improve work culture. Similarly in turret lathe machining operation also adjusted to improve the wheel bore roughness for better interference.

### 4. Shell Quality Control:

No. Of Assemblies inspected	Audit inspection of Assembly shell components	
	<b>1446</b>	<b>332</b>
		Shell
		Roof
		Under frame
		End Wall
		Side Wall
		SMS
		<b>Total</b>

### 4.1 Activities of shell Quality Control:

- All shell assembly are inspected according to SIP, quality control inspection (QCI), Cross examination (X-Point) and final inspection for ensuring complete quality of product.
- Audit inspections of Shop made and bought out items are carried out.

### 5. Activities of Coach Complaint and monitoring cell (CCMC)

Cases of failure reported by Railway	Mechanical	Electrical	Total
Cased received	412	201	613
Case closed with finalization of warranty claim.	335	153	488

## 5.1 Activities of CCMC:

- Coach complaint portal at MCF site is checked daily and complaint if any received in portal is put-up for further action.
- Monitoring of warranty claim compliance accordingly.

## 6.0 Coach Mitra

MCF/RBL has initiated the concept of Coach Mitra for better & regular interaction with field depots. MCF Mitras visit and obtain feedback from coaching depots on Quarterly basis. CDO/Sr. CDO of the Coaching depot are required to fill the feedback form given by MCF Mitra during their visit to nominated coaching depots, regarding the issues related by Coach complaints, warranty claims and any design modification or changes required if any to be implemented.

## 6.1 Activities carried by third party:

Inspection of Coaches manufactured by MCF/RBL is being carried out through third party inspection by M/s Bureau Veritas (India) Pvt. Ltd. as internationally resounded organisation.

M/s B.V. (India) Pvt. Ltd. is also engaged for the stage audit inspection of in process assembly and sub assemblies manufactured in-house. Further the inspection of jigs & fixtures for shell & Bogie assembly is also carried out by M/s B.V. (India) Pvt. Ltd.

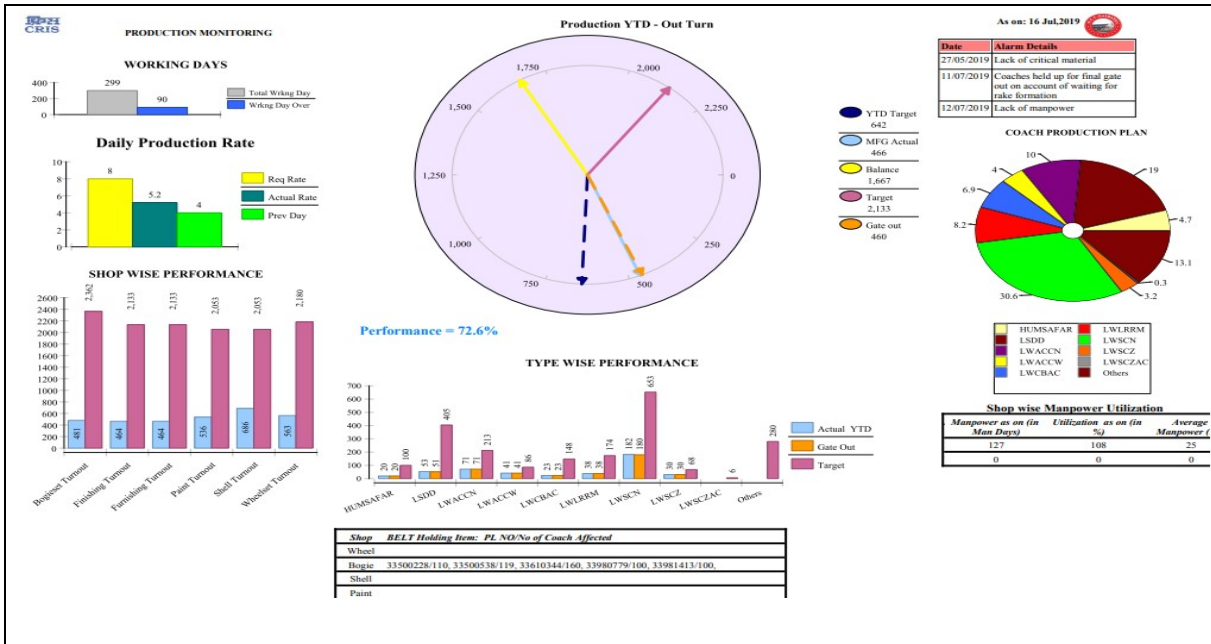
## 7.0 M&C Lab and RI wing:

- M&C lab has become NABL accredited with validity for two years from 21.12.2018 to 20.12.2020.
- M&C lab has conducted testing of 1308 consignments offered for inspection from stores.
- Chemical analysis of about 1681 samples was done by handheld spectrometer.
- M&C lab is involved in stage wise inspection of painting of coaches and quality clearance w.r.t painting along with M/s Bureau Veritas.
- MPI of 1690 axles in wheel and axle shop was conducted during machining of axles and audit check of axles was done by UST on periodic basis.
- Installation and commissioning of 07 lab equipments were done in M&C lab
- DP test conducted on 1393 shells in shell shop.
- 69 cases of non conformity raised by shop floor were dealt.

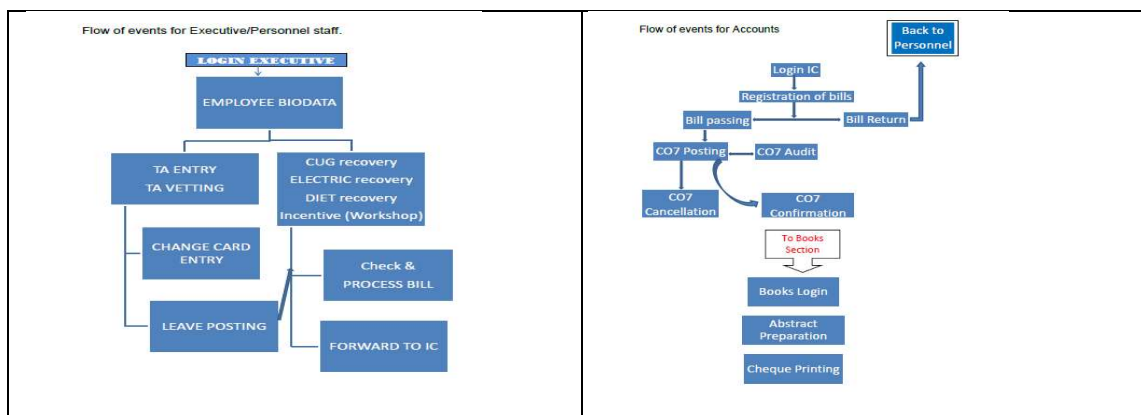
## IT

New Developments by IT wing during this year is given below:

1. **Dashboard Application:** Dashboard Application for status of coach production across various shops in MCF is being developed. The application will help in monitoring progress and getting productivity results, critical alerts, and reports of all coach variants on different sections/stages.



**2. Implementation of IPAS and IMMS applications:** Migration from existing EASY, PINS, FACT & MMIS applications to IPAS and IMMS application was done successfully. MCF has become the first unit in Indian Railways to have entire material management process seamlessly online.



**3. Computerisation of PAS/ PTO:** Application has been installed and is working over all sections of MCF.

**MODERN COACH FACTORY**  
RAEBARELI

Developed by - IT Department  
Rail Coach Factory, Kapurthala

**Issue Priv./Complementray/Widow Pass**

Employee No.: [ ] Type Of Pass : Privilege Pass Date Of Retirement : [ ]  
 (Click here to search employee no.) Pass Year: [ ] Name: Emp Name Designation: Emp Designation M  
 Pay : Grade Pay: Emp Grade Pay dsg\_hnd Status : Emp Status Date Of Birth : Emp DOB  
 Stamp Code : Emp Stamp Code Sex : Emp Sex Marital Status : Marital Status Emp HeadQtr. : HQR  Advance Pass  
 Pass Class : I Department : La Dept name Pass Centre : 01  Higher Class Pass

Ind	Name	Relation	Sex	Birth Date	Age	Dependent	Includ	Relatio Code	Hindi

Pass Balance Credit: [ ] Aailed: [ ]  
 Higher Class Balance : High  
 Pass Balance [ ]

Pass Validity  
 17/07/2019  
 pass normal

Next > Clear Detail Exit

4. **Digitization of Employee Service Records:** Important fields like name, photograph, date of birth, promotion details, award details, nomination and other personal fields have been captured in this database. Data of all 2340 employees of MCF has been fed in the application.



S.No.	Designation	Pay band	GP	Total on Roll
01	SSE	9300-34800	4600	01
02	JE	9300-34800	4200	01
03	Tech-I	5200-20200	2800	01
04	Tech-II	5200-20200	2400	01
05	Tech-III	5200-20200	1900	02
<b>Total</b>				<b>06</b>

5. **Gate Pass:** SoftwareApplication for issue of gate pass to visitors has been developed and is being used in Admin Building.

## Safety

### SAFETY CELL



**Grade-wise strength of Staff in Safety Cell**  
**BRIEF INTRODUCTION OF SAFETY CELL**

S.No.	Item	Details		
<b>1</b>	<b>General</b>			
	(a) Name of the Section	Safety Cell, Modern Coach Factory, Lalganj, Raebareli		
	(b) Address of Safety Cell	Mini Admin Building, Modern Coach Factory, Lalganj, Raebareli, Uttar Pradesh-229120		
	(c) Address of Fire Station	Fire Station , Factory premises, Modern Coach Factory, Lalganj, Raebareli, Uttar Pradesh-229120		
	(d) Telephone numbers of Safety Cell	Railway :- 62457	DOT/MTNL(with STD code)-Nil	Fax-Nil
	(e) Telephone number of Fire Station	Railway :- 62101, 62100	DOT/MTNL(with STD code)-0535-2704278	Fax-Nil
	(f) Name of Occupier	Shri Anil Kumar Singh, CPE/MCF		
<b>2</b>	<b>Details of the In-charge</b>			
	(i) Name	Shri Jitendra Kumar		
	(ii) Designation	Dy.CME/Safety		
	(iii) Mobile Number	07318060428, 9650653224		
	(iv) Email address	<a href="mailto:dycmesntmcfbl@gmail.com">dycmesntmcfbl@gmail.com</a>		
	(v) Date (dd/mm/yyyy) of posting in safety cell	1 <sup>st</sup> October 2018		
	(vi) Scale of Pay and Level	71,200/- & L-12		

**OBJECTIVE OF SAFETY CELL**

- To Advise and assist the MCF/RBL administration in the fulfillment of statutory obligation or otherwise concerning prevention of personal injuries and to maintain a safe working environment
- Compliance of statutory (safety) obligation related to The Factories Act 1948 & The U.P. Factories Rules 1950.
- Counselling to inculcate safety awareness among railway employees & contractor staffs.
- To design and conduct Shop floor and class room safety training programmes for the prevention of personal injuries at MCF/RBL.
- Statutory testing examination & certification of lifting Machine, Chains, Ropes & lifting tackles, pressure vessel.
- To organize, campaigns, competition, contests and other activities to inculcate safety awareness among workers in the organization.
- To carry out safety inspection of regular working like various shops and stores depots in order to observe the physical conditions of work and the work practice procedures followed by the workers and to render advice on measures to be adopted for reducing the unsafe physical conditions and preventing unsafe actions by workers.
- To investigate fatal and serious accidents, industrial disease and dangerous occurrences reportable under Rules 110 & 112 of the U.P. Factories Rules 1950.
- Fire fighting operation inside/outside of factory premises. Maintenance (breakdown & Preventive) of Fire hydrant & Fire alarm system, Fire tenders, Fire Extinguishers.

**INFRASTRUCTURE OF SAFETY CELL**

<b>A) INFRASTRUCTURE</b>	
(i) Total length of Fire Hydrant pipe line (in meters)	21,000 (approx)
(ii) Total no. of Fire pump house.	3 Nos.
(iii) Total no. of Hydrant Point	259 Nos.
(iv) Total no. of Fire Fighting Personal.	18+03 Relievers
(v) Total no. of Fire Extinguishers	872 Nos.
(vi) Total no. of Fire Tender	3 Nos.
(vii) Total no. of Fire trolley pump.	1 No.
(viii) Total no. of Fire Alarm panels	2 Nos.
(ix) Total no. of addressable manual call points	142 Nos.
(X) Total no. of loop powered addressable base mounted sounder	66 Nos.
(XI) Total no. of Optical beam smoke detector.	70 Nos.
(xii) Total no. of Breathing Apparatus	1 No.
(xiii) Total no. of Portable water pump.	1 No.
(xiv) Total no. of Parameter of Hydraulic Spreading Cutter.	1 No.
(xv) Total no. of Hydraulic pump.	1 No.
<b>B) Medical facilities</b>	
i) Name of medical centre:	Railway Hospital, MCF/RBL
ii) Whether in Campus?	Yes
iii) Emergency Telephone No.	0535-2704290
iv) Ambulance No.	62102, 65516

<b>C) Maintenance of Fire Fighting Equipments.</b>	
a) Fire Tenders	Outsourced
b) Fire Extinguisher	Outsourced
c) Fire Hydrant & Alarm System	Outsourced
d) Fire Fighting Personal	Outsourced
<b>a. Details of Maintenance arrangements for Fire Tenders</b>	
i) Name of the contractor	M/s. Shivam Enterprises, Rudra Nagar Colony, Pahari Gate DLW,

	Varanasi-221108.
ii) Scope of work	Non-comprehensive AMC of Fire Fighting Equipments mounted on 04 Nos. of Fire Fighting Vehicles for 3 years.
iii) Contract value	Rs. 6,16,818.00
iv) Duration of Contract	36 months.
<b>b. Details of Maintenance arrangements for Fire Extinguishers</b>	
i) Name of the contractor	M/s. A. M. Trade Linkers, 538/KA/586/1 Triveni Nagar III, Sitapur Road, Lucknow-226020.
ii) Scope of work	AMC of Fire Extinguishers at MCF/RBL for 3 years.
iii) Contract value	Rs. 9,36,479.00
iv) Duration of Contract	36 months.
<b>c. Details of Maintenance arrangements for Fire Hydrant &amp; Alarm System</b>	
i) Name of the contractor	M/s. Thermosystem Pvt. Ltd, B-134, 2 <sup>nd</sup> Floor, Sector -2, Noida, GautamBudha Nagar, Uttar Pradesh-201301
ii) Scope of work	Comprehensive Annual Maintenance Contract (CAMC) including spare parts for Fire Hydrant Pipelines and Fire Alarm System for 5 years.
iii) Contract value	Rs. 14,28,219.00
iv) Duration of Contract	60 months.
<b>d. Details of Maintenance arrangements for Fire Fighting Personal</b>	
i) Name of the contractor	M/s. Ravi Firetech Safety Engineers (P) Ltd. Flat No. GI, Navya Krishna Homes, HDFC Bank Building, Road No. 1, R. K. Puram, I.T. Colony, Hyderabad – 500035.
ii) Scope of work	Service Contract for Fire Fighting Personnel at MCF/RBL for 2 years.
iii) Contract value	Rs. 1,15,87,547.76
iv) Duration of Contract	24 months.

#### **ACTION TAKEN TO IMPROVE SAFETY IN MCF/RBL**

- ❖ Night inspections have been commenced by the plant and safety officer to ensure safe working by Railway & Contractor employee.
- ❖ Safety poster and signage have been displayed in all shops to create awareness about safety at work place.
- ❖ Counseling and fire fighting training have been more frequently involving Railway and Contractor employee in order to familiarise the employee with fire fighting equipments.
- ❖ Lectures on the safety related issues are being frequently organized by TTC.

- ❖ Safety seminar was organized by MCF in association with 3M India Ltd. Displaying PPE's & safety working at height.
- ❖ Safety committee meeting are being held quarterly, as per Factory Act-1948, to discuss on safety related issues last safety meeting was held on 24.11.2018.
- ❖ Fire audit was get done on 07.01.2019 by CFO/RBL of entire factory area.
- ❖ Safety audit was get done by M/s Bureau Veritas of entire factory area.

### **SPECIAL WORK AND SYSTEM IMPROVEMENTS TO ENSURE SAFETY**

- ❖ Provision of speed breaker & speed restriction to avoid accident.
- ❖ Safety due to more visibility and lesser speed.



### **STATUTORY CLEARANCE**

#### **FACTORY AREA**

<b>Description</b>	<b>Area</b>	<b>Frequency</b>	<b>Status</b>
Functionality Certificate of fire fighting system	Factory	Annual	Valid upto 20.04.2020
Factory License	Factory	Annual	Valid upto 31.12.2019
LPG Storage Licence	Factory	5 Yrs.	Valid upto 30.09.2021
Air Consent	Factory	5 Yrs.	Valid upto 31.12.2022
Water Consent	Factory	5 Yrs.	Valid upto 31.12.2021
Authorization under the provision of Hazardous and Other Wastes	Factory	5 Yrs.	Valid upto 28.02.2024
Public Liability Insurance Act 1991	Factory	Annual	Valid upto 17.07.2020.
Statutory testing of Lifting machines, Equipments, Pressure vessels & Factory Act 1948, The UP Factory Rules, 1950	Factory	Half yearly	Up to 6 Months.
Environment Monitoring for 3 yrs. At MCF/RBL	Factory	3 Yrs.	In forced up to 14.12.2021

#### **TOWNSHIP AREA**

<b>Description</b>	<b>Area</b>	<b>Frequency</b>	<b>Status</b>
Functionality Certificate of fire fighting system	Sarswati Auditorium	Annual	Valid upto 02.11.2021
	KVS School	Annual	Provisional NOC issued.
	Hospital MCF/RBL	Annual	Provisional NOC issued.

## **SAFETY SETUP**

### ➤ **Fire Fighting:**

- **In charge: SSE/Safety**
- 1<sup>st</sup> Response: Fire Extinguishers, fire bucket, Fire Hydrants
- Fire Tender

### ➤ **Fire Prevention:**

- Audits / Inspection, Training, Mock Drill



### **Disaster Management Plan:**

- ❖ Formulated & Issued: Emergency Preparedness Plan and Response for LPG installation, HSD oil storage, Argon and Nitrogen storage and electrical installation.
- ❖ RPF Emergency Control Room (at Gate no. 2)

### **MCF/RBL FIRE TENDER**



#### **DETAILS:**

Multipurpose  
Tank Capacity :  
Water : 4500 Litre.  
Foam : 800 Litre.  
Pump Capacity: 3200  
Ltr/min

**DETAILS:**

Water Browser  
Tank Capacity : 12000  
Litre.  
Pump Capacity: 2200  
Ltr/min



**DETAILS:**

Water Mist  
Tank Capacity : 1000

**DETAILS:**

Trolley Pump  
Pump Capacity : 1600 Ltr/Min



## MAJOR WORK TAKEN BY SAFETY CELL



**Proximity sensor on EOT**



**FLT with flasher light**

- Staff training for working at heights with fall protection.
- Lifeline Prototype Arrangement for fall Protection.



**Training of Labours on Safety Awareness & use of PPEs.**



### **SAFETY GUIDINES FOR VISITERS**

- TTC provides gate pass.
- Safety briefing.
- PPE.
- Visitors card

**FIRE HYDRANT PRESSURE GAUGE IN MCF/RBL**



**BEFORE IMPROVEMENT**

**AFTER IMPROVEMENT**

**CONNECTING HOSE PIPE**

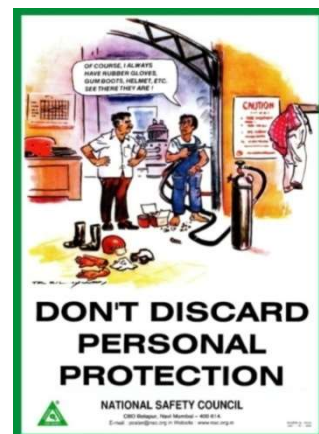
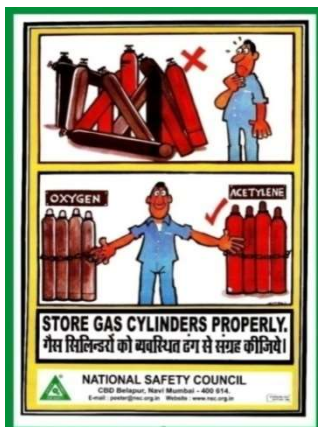


**BEFORE IMPROVEMENT**



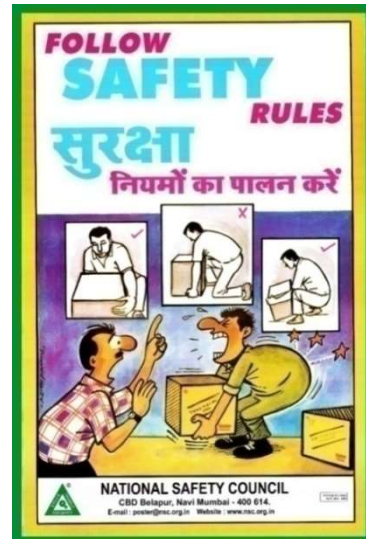
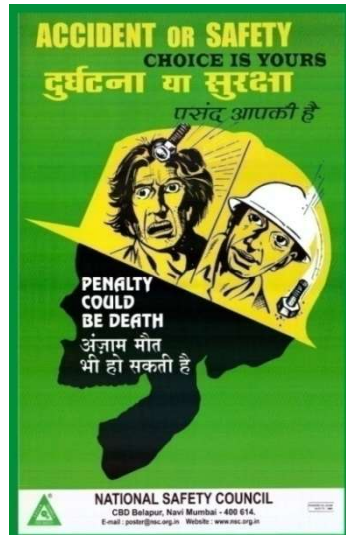
**AFTER IMPROVEMENT**

**SAFETY BANNERS**



## SAFETY BOARD

Modern Coach Factory Raebareli	
आपातकालीन फोन नम्बर EMERGENCY NUMBERS	
अग्निशामन पर्यवेक्षक FIRE EXTINGUISHING SHIFT SUPERVISOR	8948381397
फायर स्टेशन / FIRE STATION (MCF / RBL)	RLY 039 62101 0535-2704278
सेफ्टी सेल / SAFETY CELL (MCF / RBL)	RLY 039 62100
अविनाश रंजन / SSE SAFETY	7080305089
फायर स्टेशन लालमंज - FIRE STATION LALGANJ	
श्री ए.पी.सिंह / FIRE OFFICER	8127799970
फायर ऑफिस / FIRE OFFICE	9454418672
हॉस्पिटल - HOSPITAL MCF / RBL	
एम्बुलेंस / AMBULANCE	8130669957
आपातकालीन नं. / EMERGENCY MCF	0535-2704290
आर.पी.एफ. कन्ट्रोल रूम / RPF MCF / RBL	
आर.पी.एफ. कन्ट्रोल रूम / RPF CONTROL ROOM	0535-2704335



National Safety Week: Celebrated on 04-10 March 2019

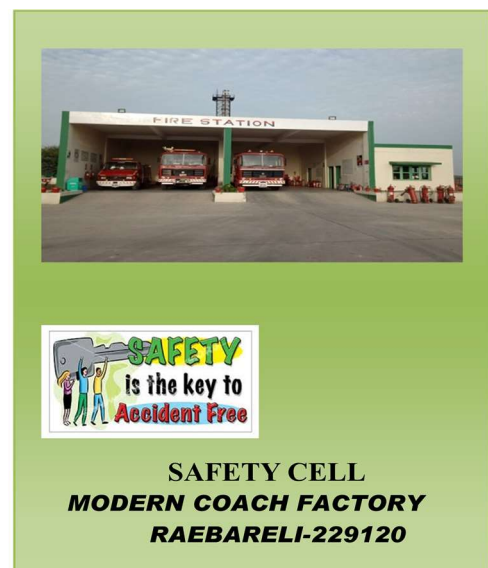
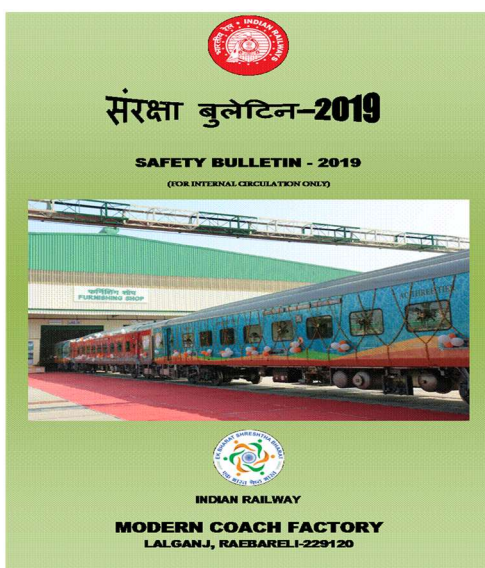


Released the Safety Bulletin-2019



Officers and Staff taking safety pledge

Published safety bulletin-2019.



- National Safety Week – 2019



**Safety committee meeting on 24.11.2018**



**Safety committee meeting on 22.02.2019.**



### Safety Seminar on 21.12.2018.

During Safety Seminar, 3M India gave Presentation on:

- (i) Fall Protection- work at height.
- (ii) Science of Safety – Respiratory, Eye, Hearing, Head.



### Safety Seminar on 08-03-2019.



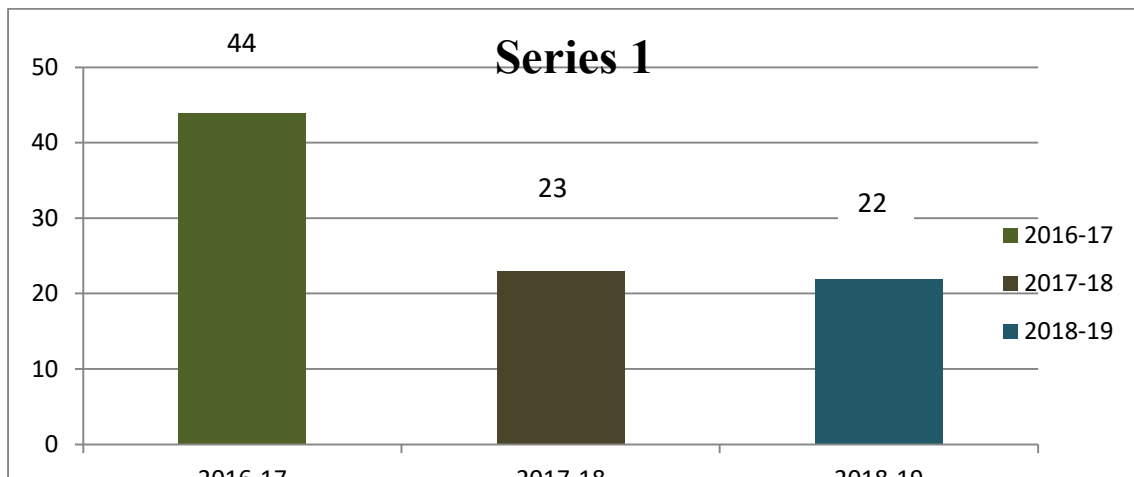
**SAFETY ANNUAL CALENDER**

<b>Sr. No.</b>	<b>Date</b>	<b>Safety Activities</b>	<b>Place</b>
1	26.04.2018	Safety Counselling & Fire Mock Drill	Shell Depot.
2	21.05.2018	Safety Counselling & Fire Mock Drill	Furnishing Depot
3	28.05.2018	Safety Counselling & Fire Mock Drill	Tool Room
4	04.06.2018	Safety Counselling & Fire Mock Drill	Fire Station
5	11.06.2018	Safety Counselling & Fire Mock Drill	Fire Station
6	15.06.2018	Safety Counselling & Fire Mock Drill	Fire Station
7	18.06.2018	Safety Counselling & Fire Mock Drill	Fire Station
8	18.06.2018	Safety Counselling & Fire Mock Drill	Fire Station
9	25.06.2018	Fire Fighting Training Under Saksham Training	Fire Station
10	02.07.2018	Fire Fighting Training Under Saksham Training	Sheet metal shop
11	09.07.2018	Safety Counselling & Fire Mock Drill	Fire Station
12	16.07.2018	Safety Counselling & Fire Mock Drill	Carpentry Shop
13	20.07.2018	Safety Counselling & Fire Mock Drill	Fire Station
14	23.07.2018	Safety Counselling & Fire Mock Drill	Fire Station
15	30.07.2018	Safety Counselling & Fire Mock Drill	Fire Station
16	06.08.2018	Safety Counselling & Fire Mock Drill	Hospital
17	06.08.2018	Safety Counselling & Fire Mock Drill	Fire Station
18	07.08.2018	Safety Counselling & Fire Mock Drill	KV School
19	13.08.2018	Safety Counselling & Fire Mock Drill	Furnishing
20	20.08.2018	Safety Counselling & Fire Mock Drill	Furnishing
21	20.08.2018	Safety Counselling & Fire Mock Drill	Fire Station
22	27.08.2018	Safety Counselling & Fire Mock Drill	Fire Station
23	28.08.2018	Safety Counselling & Fire Mock Drill	Furnishing
24	04.09.2018	Safety Counselling & Fire Mock Drill	Furnishing Progress
25	11.09.2018	Safety Counselling & Fire Mock Drill	Carpentry Shop
26	18.09.2018	Safety Counselling & Fire Mock Drill	Paint Shop
27	25.09.2018	Safety Counselling & Fire Mock Drill	Under Frame
28	08.10.2018	Safety Counselling & Fire Mock Drill	Roof Section
29	22.10.2018	Safety Counselling & Fire Mock Drill	Shell Assembly Shop
<b>Sr. No.</b>	<b>Date</b>	<b>Safety Activities</b>	<b>Place</b>
30	29.10.2018	Safety Counselling & Fire Mock Drill	Side Wall
31	01.11.2018	Safety Counselling & Fire Mock Drill	Sheet Metal
32	05.11.2018	Safety Counselling & Fire Mock Drill	Wheel Shop
33	12.11.2018	Safety Counselling & Fire Mock Drill	Shell Shop
34	15.11.2018	Safety Counselling & Fire Mock Drill	Shell Progress & Shell Mech. Store
35	19.11.2018	Safety Counselling & Fire Mock Drill	Tool Room
36	24.11.2018	Safety committee meeting	Mini Admin
37	26.11.2018	Safety Counselling & Fire Mock Drill	TPT Shop
38	30.11.2018	Safety Counselling & Fire Mock Drill	Furnishing Progress
39	07.12.2018	Safety Counselling & Fire Mock Drill	Carpentry Shop

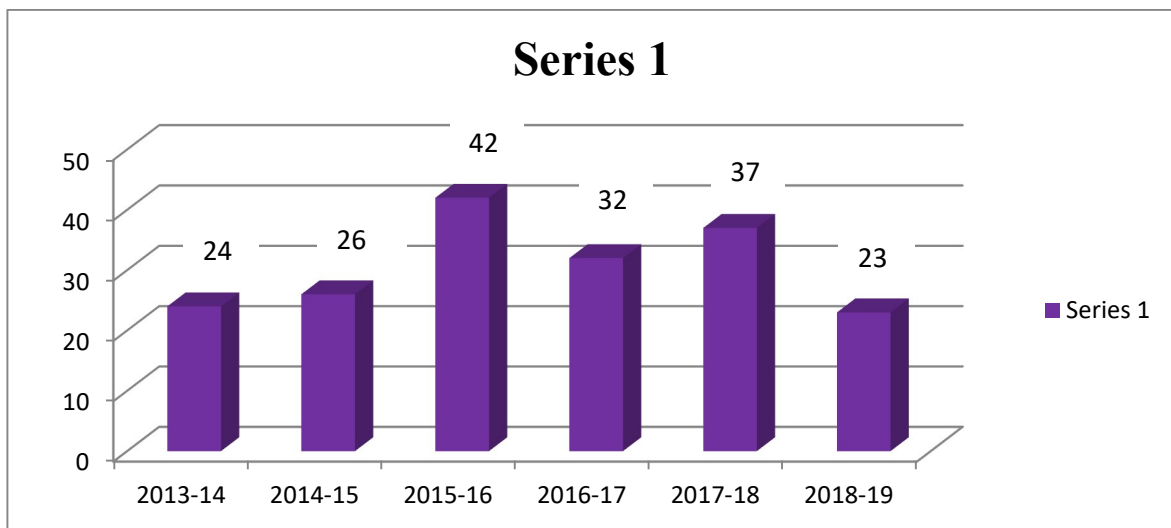
40	14.12.2018	Safety Counselling & Fire Mock Drill	Paint Shop
41	21.12.2018	Safety Seminar	Main Conference Hall of Admin Building
42	22.12.2018	Safety Counselling & Fire Mock Drill	Furnishing Shop
43	28.12.2018	Safety Counselling & Fire Mock Drill	Bogie Shop
44	31.12.2018	Safety Counselling & Fire Mock Drill	Wheel Shop
45	05.01.2019	Safety Counselling & Fire Mock Drill	Furnishing Shop
46	07.01.2019	Safety Counselling & Fire Mock Drill	Finishig Shop
47	11.01.2019	Safety Counselling & Fire Mock Drill	Transport Shop
48	15.01.2019	Safety Counselling & Fire Mock Drill	Shell Progress & Shell Mech. Store
49	19.01.2019	Safety Counselling & Fire Mock Drill	MRS
50	21.01.2019	Safety Counselling & Fire Mock Drill	Tool Room
51	25.01.2019	Safety Counselling & Fire Mock Drill	Train Linghting Shop
52	29.01.2019	Safety Counselling & Fire Mock Drill	Transport Shop
53	01.02.2019	Safety Counselling & Fire Mock Drill	Bogie Shop
54	06.02.2019	Safety Counselling & Fire Mock Drill	Furnishing Shop
55	08.02.2019	Safety Counselling & Fire Mock Drill	Shell Assembly
56	11.02.2019	Safety Counselling & Fire Mock Drill	Carpentry Shop
57	16.02.2019	Safety Counselling & Fire Mock Drill	Furnishing Shop
58	18.02.2019	Safety Counselling & Fire Mock Drill	Paint Shop
59	22.02.2019	Safety Committee Meeting	Mini Admin
60	23.02.2019	Safety Counselling & Fire Mock Drill	Gas Yard
61	25.02.2019	Safety Counselling & Fire Mock Drill	Furnishing Shop
62	05.03.2019	Safety Pledge & Speech on safety awareness	Mini Admin
		Safety Pledge, Practical demonstration on use of PPE's, Safety Quiz and Fire fighting training.	Shell Shop
63	06.03.2019	Safety Pledge, Practical demonstration on use of PPE's, Safety Quiz and Fire fighting training.	Furnishing & Finishing Shop
		Safety Pledge, Practical demonstration on use of PPE's, Safety Quiz and Fire fighting training.	Paint & Carpentry Shop
64	07.03.2019	Safety Pledge, Practical demonstration on use of PPE's, Safety Quiz and Fire fighting training.	Bogies & Wheel Shop
		Safety Pledge, Practical demonstration on use of PPE's, Safety Quiz and Fire fighting training.	Transport & Tool Room
65	08.03.2019	Safety Pledge & Release of Safety Bulletin.	Main Conference Hall of Admin Building
		Safety Pledge & Safety Seminar	Conference Hall of Mini Admin
66	09.03.2019	Prize distribution and closing function.	Conference Hall of Mini Admin
67	12.03.2019	Safety Counselling & Fire Mock Drill	Tool Room
68	16.03.2019	Safety Counselling & Fire Mock Drill	Transport Shop
69	17.03.2019	Safety Counselling & Fire Mock Drill	RPF Station
70	20.03.2019	Safety Counselling & Fire Mock Drill	Material Testing Lab
71	26.03.2019	Safety Counselling & Fire Mock Drill	Wheel Shop

## COMPARATIVE SAFETY PARAMETER

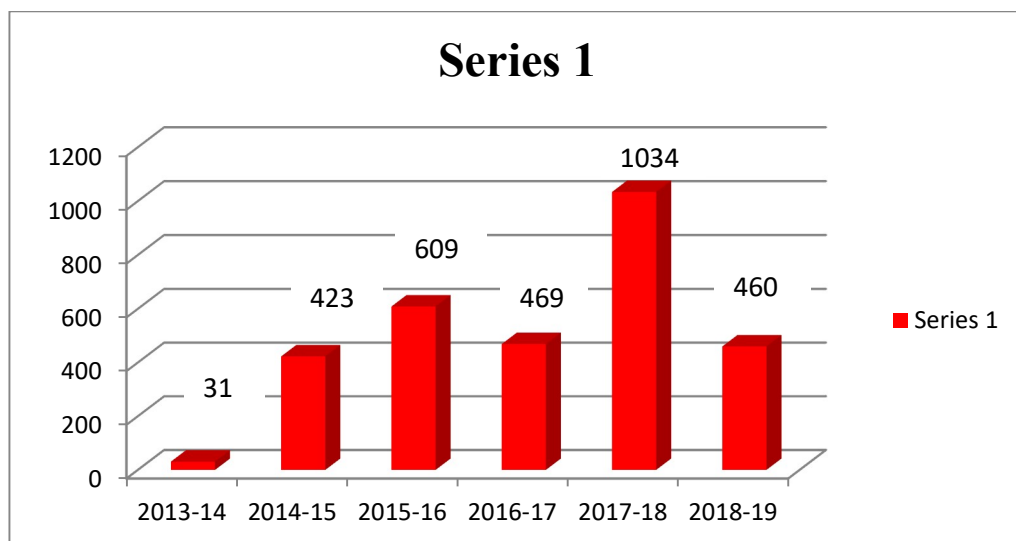
### Factory Accidents: Year Wise



### IOD Cases: (FY-wise)



### Man Days Lost (On Account of Accidents):



## ACCIDENT, IOD, FIRST AID & NEAR MISS CASES: FY 2018-19

Months	Accident	IOD	Near Miss Cases/First Aid Cases
April-18	0	0	0
May-18	2	3	2
June-18	3	1	4
July-18	1	3	3
August-18	0	4	3
September-18	1	1	1
October-18	1	2	2
November-18	0	0	2
December-18	0	0	0
January-19	0	0	0
February-19	0	0	0
March-19	0	1	0
<b>TOTAL</b>	<b>8</b>	<b>15</b>	<b>17</b>

### SAFETY FUTURE PLANES

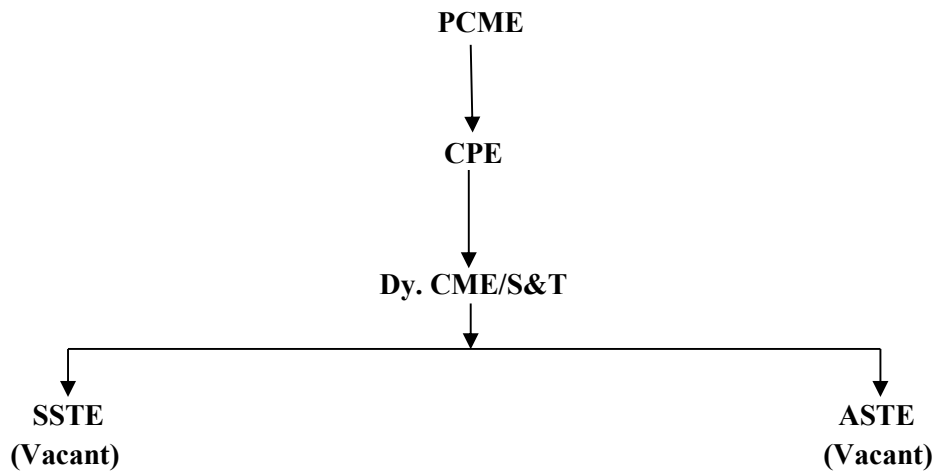
- Erection and installation of Hydrant network in the Paint Shop & Zero Value scrap Yard. PDC : Sept 2019.
- Replacement of Corroded Underground Hydrant line in the factory area. PDC : March 2020.
- Life Line in Shell Shop: PDC Dec 2019.



SIGNAL AND TELECOMMUNICATION



1.0 ORGANIZATION STRUCTURE



Contact No of S&T Department

Name	Designation	Contact No.	Email ID
A. K. Singh	CPE	7318060407	cpemcfrbl@gmail.com
Jitendra Kumar	Dy. CME/S&T	9650653224	dycmesntmcf@gmail.com

## 2.0 OBJECTIVES OF S&T DEPARTMENT

- Provision and maintenance of Telecom and networking Facilities round the clock at Modern Coach Factory, Raebareli.
- Provision of CUG SIM to all officers, Supervisors and other staff as per Railway Board guideline.
- Provision of Internet facility to all offices through Leased line of RCIL and BSNL.
- Also Provision of internet in various machines installed at shops under Industry 4.0 implementation.
- Provision and Maintenance of Railnet facility in Railway quarter through IPDSLAM technology.
- Provision and maintenance of CCTV surveillance system at all the location around the Modern Coach Factory premises.
- Provision of Audio - Video system at various location on several occasions like vendor meet, Independence and Republic day parade, VIP movement , cultural events, inter railway events etc
- Establishing of Video Conferencing between Railway Board and other railways via M/s RCIL.
- Procurement of Walkie-Talkie (VHF set) for use of RPF Personnel and others as per requirement.
- Issuing of cashless Ticket to all Railway staff at PRS in TTC Building.
- Also maintenance of PRS equipments installed at TTC Building and Post Office shopping complex.
- Provision Wi-Fi around all public places in development of smart city in MCF Township.
- Maintenance and Provision of Central announcement system around the factory and administrative Building due emergency, VIP movements and important notices.
- Provision and maintenance of S&T assets and “on run DTH facility” in ACRA coach for GM/RCF/RBL Inspection Carriage’s.
- Screening of Movie and TV programs via CUBE server and DTH at Saraswati Auditorium.
- Maintenance of UPS and Precision Air Conditioning for power supply and cooling arrangement of Server Room at administrative building.

## 3.0 OVERVIEW OF S&T DEPARTMENT

### 3.1 STAFF SUMMARY

Grade-wise sanction and on-roll strength of STAFF in Signal & Telecom, Modern Coach Factory, Raebareli

S.No.	Designation	Pay band	GP	Sanction		Total Sanction	On Roll		Total ON Roll	Vac
				Rev	WC		Rev	WC		
1	SSE	9300-34800	4600	04	02	06	04	02	06	NA
2	JE	9300-34800	4200	02	nil	02	02	nil	02	NA
3	Sr. Tech	9300-34800	4200	03	nil	03	01	nil	01	02
4	Sr. Clerck	5200-20200	2800	02	nil	02	03	nil	03	-1
5	TCM-I	5200-2020	2800	05	nil	05	04	nil	04	01
6	TCM-II	5200-20200	2400	01	nil	01	04	nil	04	-3
7	TCM-III	5200-20200	1900	02	nil	02	02	nil	02	NA
8	Khalasi	5200-20200	1800	05	nil	05	06	nil	06	-1
<b>Total</b>				<b>24</b>	<b>02</b>	<b>26</b>	<b>26</b>	<b>02</b>	<b>28</b>	<b>-2</b>

\*Complete Staff

list attached as Annexure-

### 3.2 EQUIPMENT SUMMARY

DESCRIPTION	Number (Sets)
Audio Enhancement System	08 (05 Fixed + 03 Mobile)
Video Projection System	5
LED Wall(2x2)	2
Telephone Exchange	2
CCTV Camera System	7
Video Conferencing system	1
Video Phone	1
IP based Central Announcement System	1

IP Phone	167
Analog Phone	400
Wi-Fi Access Point	90
Networking Switch	180
CUG SIM	600
PAC Unit installed at Data Center	03
VHF Walkie-Talkie HandSet	85
Passenger Reservation system	02
LED Display 55 inches	12 Nos

### 3.3 Saraswati Auditorium Audio Video Systems:

Equipments Details
Amplifiers
Mikes
Speaker
Projectors,
DVD-CD player
Podium
Cinema Processor with Dolby Atmos Surround Sound
Cube Server for cinema projection

The latest technology Cinema Processor, Dolby-Atmos sound system and Cube Server has been installed at Saraswati Auditorium for screening of high quality and resolution cinema digitally. Various Inter-Railway competitive cultural events and other MCF cultural events have been successfully organize through this system.



### 3.4 TTC Auditorium Audio Video System

Equipments Details
Amplifiers
Mikes
Speakers
Projectors
DVD-CD player
Podium



High Quality Bose Speakers, Mikes, Amplifiers have been installed in this system for enhancement of sound in public addressing, seminars and other events of MCF. Also have video projection facilities via HDMI, VGA and DVD for presentation.

### 3.5 Main conference room, GM conference room and seminar hall Audio Video System

Equipments Details
Amplifiers
Mikes
Speakers
Projectors, LED Wall
DVD-CD player
Podium



2x2 55 inches LED wall with high quality wall mount speaker and delegate mikes with surround noise cancelation technology has been installed in GM and Main conference room for better and wide screening of video and presentation.

Also in seminar hall 3 nos projectors with ceiling speakers has been installed for viewing and listening of presentation from any corner of the room without hindrants.

### 3.6 Video Conferencing System

Video conferencing facilities are available in GM conference hall. This can be connected to Railway Board and all other Zonal Headquarters for administrative purpose. Video conferencing Between MCF, Railway Board and other Zonal Railways has been successfully done at No of occasions.



### 3.7 Telephone Exchange

There is an in-house Railway Telephone Network connecting all-important offices and Township. Railway telephones exchanges are inter-connected through Railway OFC network. It has provision of IP phone which can be connect to existing LAN without any additional wiring.

#### Capacity of Telephone Exchange

S.No.	Location	Available Capacity	Used Capacity
1	Admin Building	650 Lines	270
2	Township Building	1500 Lines	250



### 3.8 Central Announcement System

Speakers has been installed throughout the factory premises in all shops by M/s CRIS. These speakers have been connected to Data Center through LAN for central announcement in case of emergency and any other important offices. Total 08 Nos of PM 8 Mic is available in this system for announcement purpose.

### Distribution of Microphone

Shell Shop	- 01
Furnishing shop	- 01
Server Room	- 01
Admin Building	- 01
Spare	- 04



Henrich PM 8 Microphone

### **3.9. Passenger Reservation System**

There is an exclusive PRS network connecting MCF PRS and Indian Post PRS- Shopping Complex. The centers are connected either through Railway OFC network or hired channels from BSNL.

#### **3.9.1 At Technical Training Center Building**

Maintained and Operated by S&T MCF/RBL and 02 No of clerical staff is available to issue Cashless ticket to Railway Staff.



#### **3.9.2 At Post Office MCF Township**

- Maintained and Operated by Post Office, MCF Township
- Connection and equipments has been provided and maintain by S&T MCF/RBL.



### **3.10 CCTV cameras at MCF/RBL**

#### **3.10.1 Scrap Yard**

S.No.	Description	Make/Model	Qty (In Nos)	Remark
1	IP based Bullet	Hikvision /DS-2CD2632F-I	2	Display and NVR at Scrap Yard
2	IP based Bullet	Hikvision /DS-2CD2212-I5	6	Display and NVR at Scrap Yard
3	IP PTZ	Hikvision /DS-2DE716-A	7	Display and NVR at Scrap Yard



### 3.10.2 RPF Post

S. No.	Description	Make/Model	Qty (In Nos)	Remark
4	IP based Bullet	Hikvision /DS-2CD2032	2	Display at <b>RPF Post</b> Distributed NVR RPF post and Admin Building
5	IP based Bullet	Hikvision /DS-2CD2032-I	2	Display at <b>RPF Post</b> Distributed NVR RPF post and Admin Building
6	IP based Bullet	Hikvision /DS-2CD2632F-I(S)	6	Display at <b>RPF Post</b> Distributed NVR RPF post and Admin Building
7	IP Based dome	Hikvision /DS-2CD2132	6	Display at <b>RPF Post</b> Distributed NVR RPF post and Admin Building
8	IP Based PTZ	Hikvision /DS-2DE7174	2	Display at <b>RPF Post</b> Distributed NVR RPF post and Admin Building



### 3.10.3 Depot Office and Shops

S. No.	Description	Make/Model	Qty (In Nos)	Remark
9	IP based Bullet	INFINOVA /VT210-A2-B0	8	Display at and NVR at <b>Store Office, Factory</b>
10	IP Based dome	INFINOVA /VT121-A20B-A022	2	Display at and NVR at <b>Store Office, Factory</b>
11	IP PTZ	INFINOVA /V1772N-20T2U-3B3L	2	Display at and NVR at <b>Store Office, Factory</b>



### 3.10.4 Hospital

S. No.	Description	Make/Model	Qty (In Nos)	Remark
12	IP based Bullet	Honeywell	4	Display and NVR at <b>CMO office</b>
13	IP Based fixed dome	Honeywell	20	Display and NVR at <b>CMO office</b>

### 3.10.5 Mini Admin

S. No.	Description	Make/Model	Qty (In Nos)	Remark
14	IP Based fixed dome	Hikvision	6	Display and NVR at <b>Mini admin</b>
15	IP based Bullet	Hikvision	23	Display and NVR at <b>Mini admin</b>



### 3.10.6 Township Gate

S. No.	Description	Make/Model	Qty (In Nos)	Remark
16	IP based Bullet	Panasonic	4	Display and NVR at <b>Township Gate</b>
17	IP PTZ	Panasonic	1	Display and NVR at <b>Township Gate</b>



### 3.10.7 TTC Building

S. No.	Description	Make/Model	Qty (In Nos)	Remark
18	IP based Bullet	Securico	10	Display and NVR at <b>TTC</b>
19	IP based Bullet	Securico	6	Display and NVR at <b>TTC</b>
20	IP Based fixed dome	Securico	4	Display and NVR at <b>TTC</b>



### 3.10.8 Internet Leased Line

S. No.	Internet Service Provider	Internet Bandwidth	Remark
1	RCIL Rainet	*50 Mbps	Protected through BSNL between LKO-MCF
	Video Conferencing(Tpass/Railnet)	04 Mbps	
	Finance Budget Portal(MPLS)	04 Mbps	
	PRS	E1(02Mbps)	
	Railway NGN PRI	E1(02Mbps)	
2	BSNL	100 Mbps	

All the OFC media from Lucknow and MCF which was maintained by M/s RCIL has been protected through BSNL OFC media on rent basis. Also separate 100 Mbps Inter leased line has been taken from BSNL as protective for RCIL (Railnet). Both Internet Leased Line has been terminated on Router installed by M/s CRIS for distribution to further LAN via Network Switches and Optical Fiber. Also Internet access through Wi-Fi in all offices has been made available.

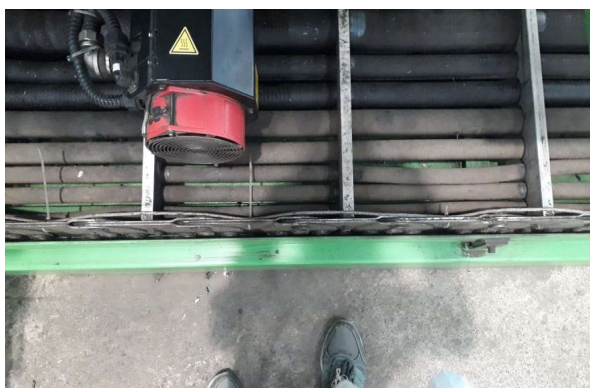
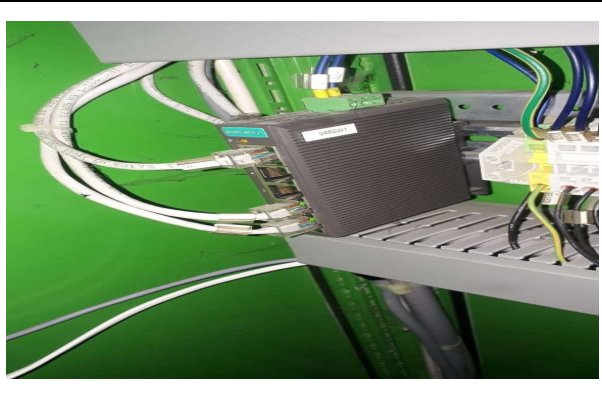
List of **Wi-Fi Access Point** are as follows:

S.No	Locations	Quantity
1	Workshop and Mini Administrative Building	43
2	Admin Building	30
3	Hospital	10
4	GM Banglow	03
5	All officer Quarter	Through ADSL Modem

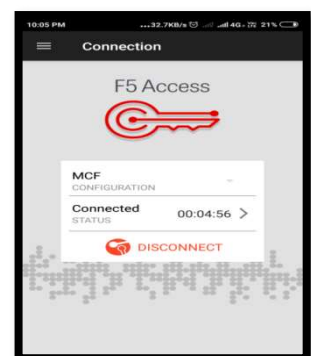
### 4.0 Industry 4.0 Standard Networking

- Provision of Internet networking wiring for implementations of industry 4.0 at wheel shop and bogie shop on following machines :-

<p><b>*Wheel shop:-</b></p> <p>i. End Drilling M/C            ii. Axle Turning M/C            iii. Cyl Grinding M/C            iv. V-Turning Lathe            v. Auto Measurement System            vi. Hyd Wheel Press            vii. Sur Wheel Lathe            viii. Dynamic Wheel Balancing            ix. VK-I Synchronised Gyntory            x. VK-II Synchronised Gyntory</p>	<p><b>* Bogie shop:-</b></p> <p>i. Bed milling            ii.Edge milling            iii. BFMC-I            iv. BFMC-II            v. BMC-I            vi.BMC-II</p>
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- Provision of industry 4.0 server access from remote location/network has been successfully done on mobile app and PCs through VPN server.



## 5.0 SPECIAL WORK COMPLETED:

5.1 Installation and commissioning of IP-PRS has been successfully completed at Post Office Shopping Complex MCF Township on 04-07-2018.



5.2 Inauguration of Wi-Fi Hot-Spot zone at shopping complex done by GM/MCF on 28.09.2018. Further work of provision in other 04 location is in progress.



5.3 50 Nos BSNL (P&T) Telephone Has been given at officers Quarter at MCF township During 2018-2019

5.4 The provision of IP phone and Railnet Connection in newly Built offices (Quality Cell) in factory area has successfully done.

5.5 The CCTV and Wi-Fi system in MCF Hospital has been successfully done on 20-12-2018 within the railway board timeline.



5.6 100 pair PIJF armored telephone cable between Admin Building and Mini admin building and internal wiring for the provision of Fax and Analog Telephone (1+1) has been successfully completed on 06-12-2018.



5.7 Provision of Live Telecast of Flag off ceremony by Prime Minister Narendra Modi via video conference has been successfully done from Finishing shop to Cricket Ground MCF township during PM visit on 16-12.2018.



5.8 Also, Provision of Audio-Video system at finishing shop, scrap yard and cricket ground has been successfully done during PM visit on 16.12.2018.



5.9 350 Nos. CUG has been activated for implementation of Phase-II for providing CUG facilities to Safety Category over IR.

5.10 03 Nos Reliance Jio Tower has successfully installed in MCF/RBL for improvement of Mobile Network throughout the MCF Premises.

5.11 Printing work of pocket Telephone Directory of MCF/RBL has been successfully done on 25.03.2019.

5.12 Provision of CCTV and Gate Access control system has been successfully installed at Mini admin building.

## 6.0 Maintenance of the Installed System

<b>a) Agency Responsible for</b>	
<b>i) Telephone Exchange</b>	Outsourced , M/s DATACOM PVT LTD.
<b>ii) CCTV</b>	Outsourced, M/s HCL and M/s VP Technology
<b>iii) Networking in Factory Area</b>	Outsourced M/s HCL
<b>iv) Public Address System</b>	By Department
<b>v) House Keeping</b>	Civil Department/MCF/RBL

\*All the above S&T gears is maintained round the clock by S&T staff and for technical assistance and repairing works different agencies also hired which is as above.

## 7.0 Spare Management System

1. Spare of all critical equipments is available and kept at same location (with identification of spare on racks) and stores.
2. Also list of spares has been developed and shared to relevant persons.
3. Purchase of spares as per requirement (collected from locations) has been done time to time.

Sl. No.	Name of work	Name of Contractor	Amount	Date of AMC	Date of Renewal
1	Comprehensive Annual Maintenance Contract of Optical Fibre Cable at Modern Coach Factory, Lalganj, Raebareli.	M/s Raj Construction Liberty Coloney Lucknow, UP-226016	Rs.3,80,107/-	08/10/2018	07/10/2019
2	Comprehensive Maintenance Contract of CCTV system installed in Admin Building, Factory Gate and Scrap Yard at MCF for one year.	M/s V.P.Technologies, Flat No. C0003, Meadows Vista, Raj Nagar Extn., Ghaziabad – 201003	Rs.2,80,958/-	21/09/2018	20/09/2019
3	“Comprehensive Maintenance Contract for three year of Electronic Exchanges (Make - Avaya, Model no. Aura ® Communication Manager R 6.) installed in Modern Coach Factory, Raebareli..	M/s Datacom Products (India) Pvt. Ltd., 214, ChampaklalUdyogBhawan 105, SionKoliwada Rd., Sion (E) Mumbai-22	Rs. 3143746.00 for one year and Rs. 94,31,238/- for three years	03/05/2018	02/05/2021
4	Comprehensive Maintenance Contract for two years of ‘on run DTH facility” in ACRA coach for GM/RCF/RBL Inspection Carriage’s.	Mindstrings Consulting Pvt. Ltd., 224, Raja Garden, New Delhi PIN Code– 110015.	Rs.3,27,096/-	12/03/2018	11/03/2020
5	AMC of Audio & Video system at TTC auditorium for three years.	-----	Rs.28,63,003.32	-----	03 Year
6	AMC of Audio & Video system at Saraswatauditorium for three years.	-----	Rs. 58,91,406.48	-----	03 Year

## 8.0 Financial Summary of Financial Year 2018-19

S.No.	Budget Sub Head	Allocation Head	Bill amount submitted	Bill Amount to be submitted
1	Contract	WMS 7200	38,08,862.00	0.00
	Total		38,08,862.00	0.00

## 9.0 Future Plan for improvement of Data Service

### 9.1 Proposed CCTV camera

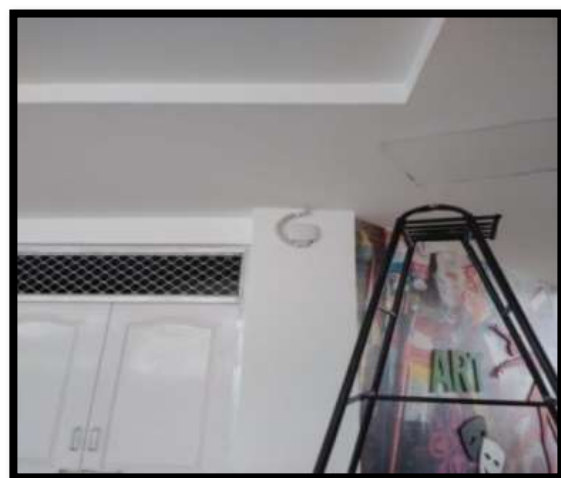
S.No.	Description	Make/Model	Qty (In Nos)	Remark
1	PTZ Camera	HIKVISION	6	Display at RPF Post
2	IP based Bullet	HIKVISION	10	Display at RPF Post
	<b>Total</b>		<b>16</b>	

3	IP PTZ camera		22	Display at RPF Post
4	IP based Bullet		60	Display at RPF Post
5	Thermal Camera		2	Display at RPF Post
	<b>Total Camera</b>	----	<b>84</b>	

### 9.2 Proposed Bandwidth as per no of connections for improvement of Internet speed in MCF/RBL

S.No.	Location	No. of connections	Concurrent Users (Peak Hours)	Bandwidth Requirement	Remark
01.	Township and Hospital	150	50	500 Mbps	
02.	Admin Building and Workshop	800 user + 20 (Machine in Industrial 4.0 automation)	20 machine + 300 user	2000 Mbps	
03.	Admin Building and Workshop	800 user + 20 (Machine in Industrial 4.0 automation)	20 Machine + 300 user	300 Mbps	As a standby to the rail net 2000 Mbps.

### 9.3 Provision of Wi-Fi Hot-Spot Zone at Central Park, Shopping Complex, Gomti Indoor Stadium and Saraswati Auditorium, MCF Township is in progress.





## TECHNICAL TRAINING CENTRE

**CERTIFIED**

1. ISO 22163:2017 (IRIS) Certified
2. ISO 9001:2015 TOGETHER WITH ISO 3834-2:2005
3. ISO14001:2015
4. ISO50001:2011
5. OHSAS 18001:2007
6. NABL Certified Lab (ISO/IEC 17025:2005)
7. 5S

S.N.o.	Item	Details
1.	<b>General</b>	
	(a) Name of the Training Institution	Technical Training Centre, Modern Coach Factory, Raebareli

(b) Location of the training Institution (with map in A4 size as Annexure I)	Raebareli - Kanpur Highway, Near Lalganj, Uttar Pradesh		
(c) Complete postal address with pin code	Raebareli - Kanpur Highway, Near Lalganj, Raebareli, Uttar Pradesh 229120		
(d) Details of ISO and other certifications obtained, if any	IRIS Certified ISO 9001:2015 together with ISO 3834-2:2005 ISO 14001:2015 ISO 50001:2011 OHSAS 18001:2007 5 S NABL Certified Lab ( ISO/IEC 17025:2005)		
(e) Telephone numbers of Training Institution	Railway 039- 60516, 60517, 60519	DOT/MTNL (with STD code)- Nil	Fax- Nil
(f) Web site address of the Institution	<a href="https://mcf.indianrailways.gov.in/view_section.jsp?lang=0&amp;id=0,300.406">https://mcf.indianrailways.gov.in/view_section.jsp?lang=0&amp;id=0,300.406</a>		
(g) Date of setting up	January-2013		
(h) Whether recognized by Railway Board (Tick appropriately)	Yes (Railway Board has recognized, approved & included the name of Technical Training Centre, MCF/RBL in the approved list of “Manual on Management of Training”, vide letter no. E (MPP) 2015/3/24, dated- 24.05.16 (RBE No. 52/2016)).		
(i) Nominated Training Manager by Railway Board/ Railway (Name and Designation)	Sri Anil Kumar Singh, CPE/MCF		
2.	<b>Details of the In-charge</b>		
(i) Name	Sri Shreeram Singh		
(ii) Designation	Dy.CME/IT&TTC (Principal of Technical Training Centre)		
(iii) Mobile Number	07318060420		
(iv) Email address	pttcmcfbrbl@gmail.com		
(v) Date (dd/mm/yyyy) of joining Training Institution	11	03	2019
(vi) Scale of Pay and Grade Pay	1,09,200/00- , 7,600/00- , L-12		

3.	(a) Objectives of the Training Institution	<ul style="list-style-type: none"> <li>➤ Develop TTC as centre of excellence</li> <li>➤ Training and Skill Development of serving as well as newly recruited Employees</li> <li>➤ Cater the training needs of the MCF/RBL</li> <li>➤ “Product based training” to all Zonal Railways &amp; Production units as per their requirements</li> <li>➤ Contribute towards industrial development of the nation through skill development</li> </ul>
	(b) Board Category of staff being trained (Name five major categories only)	<ul style="list-style-type: none"> <li>i. Mechanical Artisan staff</li> <li>ii. Electrical Artisan staff</li> <li>iii. Supervisory staff</li> <li>iv. Group ‘D’ staff</li> <li>v. Contractual workers</li> </ul>
4.	<b>Infrastructure</b>	

<b>(a) Lay out</b>					
(i) Total area of the Training Institution (In sq. meter)	48,000 Sq. meters (approx)				
(ii) Total covered area (sq. meter )	10,500 Sq. meters (approx)				
(iii) Total open area (sq. meter)	37,500 Sq. meters (approx)				
(iv) Lay out plan	Attached in A4 size as Annexure-II (i) & (ii)				
(v) Landscaping/Garden (Tick Appropriately)	Yes				
(vi) Power supply availability (Tick appropriately)	24 hrs.				
(vii) Availability of generator back up /Power back up for	Office	Class Rooms	Hostel	Mess	
	Yes	Yes	Yes	Yes	
<b>(b) Class Rooms</b>					
(i) Area (sq. meter, in ascending Order) of class rooms	60				
(ii) Number of rooms	06				
(iii) Capacity of each class room (in terms of number of Trainees)	32				
(iv) Average Class room capacity	32 seats				
<b>(c) Number of toilets near class rooms</b>	Gents	02 blocks			
	Ladies	02 blocks			
<b>(d) Hostel Accommodation</b>					
(i) Room details					
	Single Bed	Double Bed	Triple Bed	Dormitory (4beds & above)	Ladies
(ii) Average area (Sq. meter) of Each room	----	13.86	-----	-----	13.86
(iii) No. of Rooms	----	34	-----	-----	34
(iv) Details of toilets (if attached)	----	No	-----	-----	No
(v) If not attached, No./Size of The toilets in hostel	Number			Area (Avg. Size in sq. meter)	
	06			49.95	
<b>(e) Model Rooms</b>					
(i) No. of Model Rooms	09 Labs + 04 Workshops				
(ii) Describe layout of each (briefly)	I. Mechatronics Lab II. Automation Lab III. Electrical Lab IV. Computer Lab (02) V. Coach Component Display (02) VI. Welding Test Lab VII. Welding Shop VIII. Fitting Shop IX. Machine Shop				

		X. FRP & Composite Shop		
(iii) Avg. Area (m. sq.) of model rooms		Labs- 92.6, Workshops- 375		
List of equipment in each Model room (enclose as Annexure III)				
<b>(f) Library Facilities</b>				
(i) Available (Tick appropriately)		Yes		
<b>If Available</b>				
(ii) Total no. of Books available		744		
(iii) Types of Books				
	Codes & Manuals	Technical	Railway Publications	Others
Number	31	390	48	275

iv) Number of Books in various languages.				
	English	Hindi	Regional language	Others
Number	661	83		
v) Library Budget (annual, if any) Details			Nil	
<b>g) Computer Facilities</b>				
i) Number of rooms			02	
ii) Average area of each Room (in sq. meter)			93.45	
iii) Number of computers			16	
iv) Types of computer course being run (Major 5 course)		Nil		
v) Average number of trainees using computer facilities /month			21	
<b>h) Medical facilities</b>				
i) Name of medical centre:		Railway Hospital, MCF/RBL		
ii) Whether in Campus?		Yes		
iii) If NO, Distance from training center (in KMs) if located in the same town		Railway health center	Railway hospital	Other public/Private Hospital
		NA	NA	NA
<b>i) Recreational facilities</b>				
i) Indoor (Please specify 5 major games)		(i) Chess (ii) Table Tennis (ii) Carom Board		
ii) Outdoor (Please specify 3 major games)		(i) Cricket (ii) Volley ball (ii) Badminton		

	iii)Yoga/PT	Yes
	iv)If Yes (Please specify timing Morning/Evening)	5.0am-7.0am

5.	Training Aids		
	a) Over Head Projector	Available	If Available Number 03
	b) White Board	Available	If Available Number 06
	c) Flip chart board	Available	If Available Number 04
	d) TV/Projection TV	Available	If Available Number 03
	e) LCD Projector	Available	If Available Number 02
	f) VCR/DVD/CD Player	Not Available	If Available Number
	g) Video Camera/Digital Camera	Not Available	If Available Number
	h) Photocopying/resograph	Available	If Available Number 01
	i) Digital Scanner	Available	If Available Number 01
	j) PCs(Other than in computer center)	Available	If Available Number 05
	k) Laptop	Not Available	If Available Number
	l) Printers	Available	If Available Number 07
	m) Other Photocopying facilities	Not Available	If Available Number
	n) Public address systems	Available	If Available Number 01

6.	Capacity Utilization		
	a) Planned Capacity	In terms of trainee seats	In terms of trainee days
		192 per day	57600 per year

b) Capacity Utilized (Including 03 previous financial years)	Years	In terms of trainee seats	In terms of trainee days
	2018-19 (up to 31.01.19)	41.53%	60.05%
	2017-18	35.10%	50.05%
	2016-17	19.21%	27.11%
	2015-16	31.89%	45.02%

c) Details of trainees who have completed the training FY 17-18 (separate annexure IX to be giving Name, Designation, Name of Course attended, No. of Days of Training)

d) Number of one days/two day crash course training organized during the year –In terms of E(MPP)2003/3/16 dated 10.07.03 (RBE 122/2003) Nil

**7. Budget Utilization**

a) Name of officer controlling the budget Chief Planning Engineer, MCF/RBL

b) Budget	Year	Allotment	Utilization
Mechatronics Lab & Automation Lab	2018-19	Rs. 5,31,00,000.00	Rs. 5,28,00,000.00
Welding Lab	2018-19	Rs. 1,16,69,000.00	Rs. 1,16,69,000.00
Computer Lab	2018-19	Rs. 9,27,504.00	Rs. 8,76,800.00

c) Works Programs in progress/sanctioned for the training institution

**A) Pink Book (list each work)- Nil**

Item no.	Years of section	Nature of work	Anticipated cost in (000 of Rs)	Budget Utilized so far in (000 of Rs.)	Progress of work (% completion)	Likely Target of completion of work (if not done)
1						
2						
3						

**B) GM's LAW Book (list each work)-nil**

Item No.	Years of section	Nature of work	Anticipated cost in(000 of Rs)	Budget Utilized so far	Progress of work	Likely Target of completion of work
1	NA	NA	NA	NA	NA	NA
2	NA	NA	NA	NA	NA	NA
3	NA	NA	NA	NA	NA	NA

**Maintenance of the Institution**

**a) Agency Responsible for**

i) Civil Maintenance	Civil Department/MCF/RBL
ii) Electrical Maintenance	Elect. Department/MCF/RBL
iii) S & T Maintenance	S&T Department/MCF/RBL
iv) Sanitation	Outsourced
v) Cleaning & Housekeeping	Outsourced

**b) If done departmentally, details of staff available for maintenance**

Category	Sanction	On Roll	Vacancy
Part of overall maintenance of Civil/Electrical/S&T assets of Modern Coach Factory, Raebareli.			

**c) If out sourced, details of Maintenance arrangements**

i) Name of the Maintenance contractor	M/s. Euro Smile Service Facilities PVT.LTD.
ii) Scope of work	Housekeeping of TTC and its Hostel and Surrounding areas as per scope of the work of TTC/MCF/RBL.
iii) Contract value	Rs. 58,17,847.00

iv) Duration of Contract	12 months			
8.	<b>Inspections</b>			
i) Number of Inspection done in 2018-19	GM	By SAG officer	By JAG officer	By Other officer
	02	17	15	04
<b>ii) Details of inspection</b>				
Designation of inspecting authority	Date of visit	Outcome off the Inspection report (attach in separate annexure X)		
General Manager (GM)	09.11.18 & 27.11.18	Attached at annexure X		
PCME	09.11.18, 27.11.18, & 28.03.19			
PCE	09.11.18 & 27.11.18			
CPE	17.09.18, 09.11.18, 27.11.18, 28.12.18, 25.03.19 & 28.03.19			
CEE/PS	30.01.19			
CPL	31.01.19			
CQM	29.03.19			
CMEP	30.01.19			

9.	<b>Training Methodology</b>				
	<b>Lecture</b>	<b>Discussion</b>	<b>Group Activity</b>	<b>Individual Activity</b>	<b>Collaborative learning</b>
	Yes	Yes	Yes	Yes	
	<b>Action Learning</b>	<b>Problem based learning</b>	<b>Case study</b>	<b>Learning games</b>	<b>Videos</b>
			Yes		Yes
	<b>Printed Materials</b>	<b>Computer Aided Instruction</b>	<b>Simulators</b>		

	Yes				
10.	<b>Feedback/evaluation</b>				
	<b>a) Is there a feedback system in existence</b>			<b>Yes</b>	
	If Yes, What is the average rating obtained in respect of the following in 2018-19				

Note: A 5 Point rating scale (1 being the lowest, 5 being the highest) is to be used. If not specify the rating scale used.			Excellent/Fair/Poor				
<b>Parameters</b>			<b>Rating</b>				
i) Overall maintenance			Excellent				
ii) Quality of food in the mess			-----				
iii) Overall Quality of Instruction			Excellent				
iv) Overall Participant satisfaction			Excellent				
<b>b) Trainee's Performance information (In the various training programs completed during the year ,put together)</b>							
Name of course (List 5 major courses)	Pass percentage	% of marks obtained by the toppers			% of marks obtained by lowest scoring participant		
		1st	2nd	3rd	Lowest	Second lowest	Third lowest
i) MSEW(mechanical Section Engg./Workshop)	100	71.59	68.82	66.82	55.76	61.76	----
ii) MJRW(Mechanical Junior Engg./Workshop)	100	81.41	79.59	77.06	53.47	54.35	56.76
iii) RJE (Recreational Junior Engg.)	100	76.25	76.125	75.5	65.75	66.375	67.125
iv) App.Tech-III	100	84.38	80.00	78.75	60.63	63.75	64.38

<b>c) Pattern of examination (Where assessment is made)</b>				
	Name of Course	Type of Examination (Written/oral/Practical)	If written, % of objective type question	Periodicity ( End of course/weekly/others)
1	Induction SSE/JE	Written + Oral	40%	Sessional + End of Course
2	Induction Artisans	Written + Oral	40%	End of Course
3	RJE(Recreational Junior Engg.)	Written + Oral	40%	End of Course
4	FLT operator certification	Written + Practical+ Oral	40%	End of Course
11	<b>Details of Publications</b>			
		Quarterly News letter	Annual Report	Other Technical Publication
		Yes/No	Yes/No	Yes/No
	Number of Publication	0	0	0

12.	<b>Attach Photograph of following –day time and Night photo(with lights)</b>	
	a) General Campus buildings	b) Class room and toilets
	b) Office room and toilets	d) Hostel rooms and toilets
	e) Kitchen, Dining Rooms, Pantry, Utensil Cleaning area.	f) Recreation Room
	g) Recreation Facilities	h) Library Room
	i) Model Room	j) Meeting Hall/Conference Hall
	k) Auditorium	l) landscaping (Day Time photo only)
	m) gardens (Day Time photo only)	Roads (Day Time photo only)
	Other Amenities (if any)	
13.	<b>Performance highlights</b> (Please furnish additional details not already covered, if any)	

**List of Annexure**

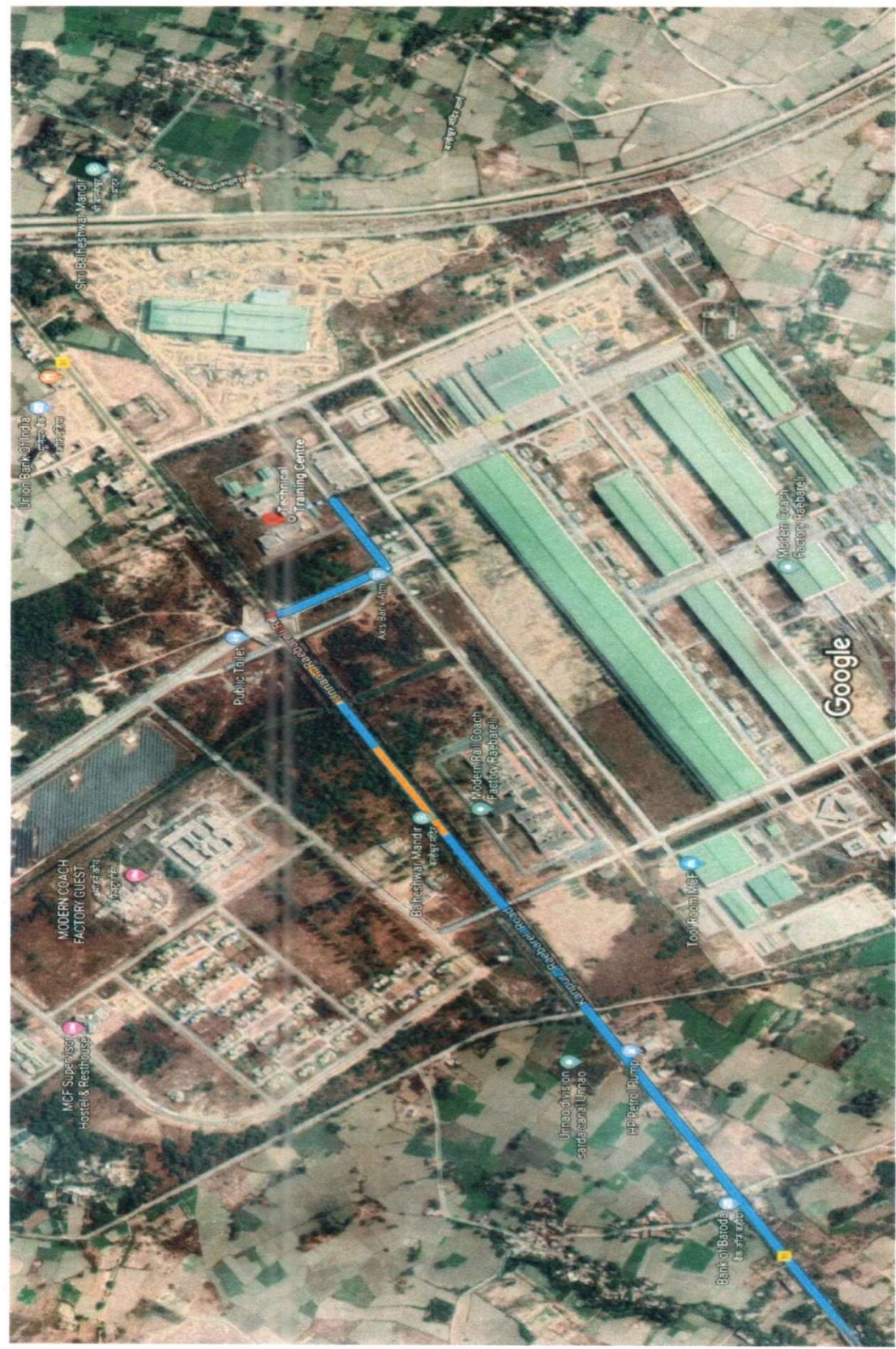
S.No.	Annexure	Description
1.	01	Location of the Training Centre with map in A4 size
2.	02	Layout plan of training institute in A4 size
3.	03	List of equipments in model room
4.	04	Kitchen facilities available
5.	05	Detail of Gazetted faculty
6.	06	Detail of Non Gazetted faculty
7.	07	Grade wise sanction and on roll strength of trainer/instructor
8.	08	Details of disaster management program (if conducted)
9.	09	Details of trainees who have completed the training in 2018-19

**Annexure-I**

**Location of the Training Centre with map in A4 size:**

Google Maps Lalganj, Uttar Pradesh 229206 to Technical Training Centre

Drive 4.9 km, 12 min



Annexure-II

Layout plan of training institute in A4 size:





**List of Equipments in Model room/Labs of Technical Training Centre, Modern Coach Factory,  
Raebareli**

S.No.	Model room/Lab/Workshop	Equipments available
1	Mechatronics and Automation Lab	Hydraulic trainer kit <ul style="list-style-type: none"> <li>a. LHB coach braking systems</li> <li>b. Hydraulics learning centre</li> <li>c. LHB bogie Simulator</li> <li>d. Bio vacuum simulator system</li> <li>e. E learning centre for hydraulics.</li> </ul>
		Electro hydraulic trainer kit <ul style="list-style-type: none"> <li>a. E learning centre for electro hydraulic.</li> </ul>
		Pneumatic trainer kit <ul style="list-style-type: none"> <li>a. E learning centre for pneumatics</li> </ul>
		Automation system <ul style="list-style-type: none"> <li>j. Laser cutting simulator</li> <li>k. Training robot with control box and teach pendant</li> <li>l. Fanuc CNC machine controller simulator</li> <li>m. Fanuc CNC machine controller software</li> <li>n. The controller identical NC programming workstation (SIEMENS)</li> <li>o. Application of pick and place arm at MCF</li> <li>p. Humanoid robot</li> <li>q. Electronic shop (diagnostic)</li> <li>r. Sensor lab equipment to make aware of the basic principles &amp; their types used in automation industries.</li> </ul>
2	Fitting Shop	Hand tool set for fitting shop
		Hand tool set for Assembly Lab
		Power tool set for fitting shop
		Power tool set for Assembly Lab
3	Machine Shop	80 Ton Mechanical Press Brake
		Shaper Machine
		Power Hacksaw
		CNC training Lathe
		Portable Air Compressor
4	Welding Shop & Weld Test Lab	Synergic MIG/MAG CO2 Welding Set
		Pulse MIG/MAG CO2 Welding Set
		Spot welding machine
		Intelligent Monitor MIG/MAG Welding Machine (Under installation)
		Battery Operated Arc Welding Machine (Under installation)
		TIG (AC/DC) Welding machine with digital programmable (Under installation)
		Teach ware set (Under installation)
		Virtual Welding Simulator (Under installation)
		Training Welding Demonstration stand with fume extraction system (Under installation)
		Portable Arc welding machine (Under installation)
		Fume extraction System (Under installation)
		Submerged Arc Welding machine (Under installation)
		Plasma Cutting machine (Under installation)
		Universal Testing Machine (Under installation)
Metallurgical Microscope (Under installation)		
5	Computer Lab	16 Desktops (Under installation)
6	Coach Component Display	Complete Bogie, Disassembled Bogie components, CBC, Wheel & Axle
		Coach Shell Mockup

**List of Facilities available in Technical Training Centre Hostel Kitchen**

S.No.	Item	Qty.
1	Water Cooler with RO	01 No.
2	RO water purifier	01 No.
3	Dining Table	14 Nos.
4	Dining Chair	86 Nos.
5	Bain Mary	01 No.
6	Gas Stove 2 burner	01 No.
7	Nano RO 20Litre	02 Nos.
8	Refrigerator 230 litre	01 No.
9	Tawa Roti with puffer plate	01 No.
10	Cafeteria Plate +glass+ spoon	100 Nos.
11	Pressure Cooker 12 litre	02 Nos.
12	Karahi Iron	01 No.
13	Tawa iron	01 No.
14	Chakala + belna+chimta	01 No.
15	Bagonaaluminium with cover	02 Nos.
16	Bagona (5x10x15 litre) SS	02 Nos.
17	Hot pot set	02 Nos.
18	Water Tank 50L	01 No.
19	Service Tray SS	02 Nos.
20	Jug Steel	10 Nos.
21	Chamcha+Carchi+ Sarasi+TeaStrainer+Jhara	01 set
22	Service Spoon	06 Nos.
23	Rice Spoon	01 No.
24	Knife Set	01 No.
25	Chopping Board	01 No.
26	LPG gas regulator with connecting tube	01 No.
27	Stockpot Stove	02 Nos.
28	LPG gas cylinder 19 Kg	04 Nos.

## Annexure V

**Details of Gazetted Faculty at Technical Training Centre, Modern Coach Factory, Raebareli**

S.No.	Name	Designation
1	Sri Shreeram Singh	Dy. CME/IT&TTC

**Details of Non-Gazetted Faculty at Technical Training Centre, Modern Coach Factory, Raebareli**

S.No.	Name	Designation	Date of Joining Training Centre
1	Sri UMESH SINGH	SSE/Mech	14.01.2013
2	Sri MANOJ KUMAR	SSE/Elect	23.05.2016
3	Sri SHAMIM HUSSAIN	SSE/Mech	03.01.2019
4	Sri R.K.GUPTA	SSE/Mech	01.03.2019
5	Sri RABINDRA PANDEY	SSE/Mech	01.03.2019
6	Sri ANUJ KUMAR	JE/Mech	15.09.2018

**Grade-wise sanction and on-roll strength of trainers/instructors in Technical Training Centre, Modern Coach Factory, Raebareli**

S.No.	Designation	Pay band	GP	Sanction		Total Sanction	On Roll			Total on Roll	Vac
				Rev	WC		Rev	WC	Trg.		
1	SSE	9300-34800	4600	Nil	Nil	Nil	5	Nil	Nil	5	NA
2	JE	9300-34800	4200	Nil	Nil	Nil	1	Nil	Nil	1	NA
<b>Total</b>				Nil	Nil	Nil	6	Nil	Nil	6	NA

**Details of disaster management program (if conducted)**

NA

**Details of the Trainees who have completed the training in FY 18-19**

S.No.	Name	Designation	Name of Course attended	No. of days of Training
1	ShankulSaurabh	App.SSE/Mech. WS	Induction Training	52 weeks
2	Mukesh Kumar	App.SSE/Mech. WS	Induction Training	52 weeks
3	Avinash Kumar Verma	App.SSE/Mech. WS	Induction Training	52 weeks
4	Deepak Kumar	App.SSE/Mech. WS	Induction Training	52 weeks
5	Jeetender Singh Kushawaha	App.JE/Mech.WS	Induction Training	52 weeks
6	Rahul Kumar	App.JE/Mech.WS	Induction Training	52 weeks
7	Bipin Kumar	App.JE/Mech.WS	Induction Training	52 weeks
8	Ravi Kant	App.JE/Mech.WS	Induction Training	52 weeks
9	Mohammad Zeeshan	App.JE/Mech.WS	Induction Training	52 weeks
10	Nishant Badal	App.JE/Mech.WS	Induction Training	52 weeks
11	Rahul Shukla	App.JE/Mech.WS	Induction Training	52 weeks
12	Amit Kumar Gour	App.JE/Mech.WS	Induction Training	52 weeks
13	Sumant Raj	App.JE/Mech.WS	Induction Training	52 weeks

14	Deepak Kumar	App.JE/Mech.WS	Induction Training	52 weeks
15	DasharajBaitha	App.JE/Mech.WS	Induction Training	52 weeks
16	Ankur Patel	App.JE/Mech.WS	Induction Training	52 weeks
17	Dharmendra Kumar	App.JE/Mech.WS	Induction Training	52 weeks
18	Kumar Suryamani Singh	App.JE/Mech.WS	Induction Training	52 weeks
19	Sumit Kumar	App.JE/Mech.WS	Induction Training	52 weeks
20	Brijender Singh	App.JE/Mech.WS	Induction Training	52 weeks
21	Jairam Meena	App.JE/Mech.WS	Induction Training	52 weeks
22	Amal Kumar Singh	App.JE/Mech.WS	Induction Training	52 weeks
23	Anuj Kumar	App.JE/Mech.WS	Induction Training	52 weeks
24	Shashi Kant Bharti	App.JE/Mech.WS	Induction Training	52 weeks
25	Navin Kumar	App.JE/Mech.WS	Induction Training	52 weeks
26	Ravi Dutt	App.JE/Mech.WS	Induction Training	52 weeks
27	Ruchin Kumar	App.JE/Mech.WS	Induction Training	52 weeks
28	Atul Chaudhry	App.SSE/Mech. WS	Induction Training	52 weeks
29	Rohit Kumar	App.SSE/D&D	Induction Training	52 weeks
30	RoneeMinj	App.JE/D&D	Induction Training	52 weeks
31	Shyam Sunder Verma	App.Tech-III	Induction Training	26 weeks
32	Sitesh Kumar Sharma	App.Tech-III	Induction Training	26 weeks
33	Akash Gandhi	App.Tech-III	Induction Training	26 weeks
34	Ram BalakMandal	App.Tech-III	Induction Training	26 weeks
35	Dhirendra Kumar	App.Tech-III	Induction Training	26 weeks
36	MD. PhoolHasan	App.Tech-III	Induction Training	26 weeks
37	Amarjeet Kumar	App.Tech-III	Induction Training	26 weeks
38	Manoj Kumar	App.Tech-III	Induction Training	26 weeks
39	Mukesh Kumar	App.Tech-III	Induction Training	26 weeks
40	Sandeep Kumar Singh	App.Tech-III	Induction Training	26 weeks
41	Sonu Kumar Sharma	App.Tech-III	Induction Training	26 weeks
42	Niranjan Kumar	App.Tech-III	Induction Training	26 weeks
43	Ajeet Kumar	App.Tech-III	Induction Training	26 weeks
44	Jagmohan Meena	App.Tech-III	Induction Training	26 weeks
45	Rajesh Kumar Meena	App.Tech-III	Induction Training	26 weeks
46	Anup Kumar Sharma	App.Tech-III	Induction Training	26 weeks
47	Nagmani Kumar	App.Tech-III	Induction Training	26 weeks
48	Ajay kumar	App.Tech-III	Induction Training	26 weeks
49	Pradeep Kumar	App.Tech-III	Induction Training	26 weeks
50	Neeshu Ahmad	App.Tech-III	Induction Training	26 weeks
51	Gyan Pravin Kumar	App.Tech-III	Induction Training	26 weeks
52	Jai Narayan Paswan	App.Tech-III	Induction Training	26 weeks
53	PijushBarui	App.Tech-III	Induction Training	26 weeks
54	Deepak Kumar Barnwal	App.Tech-III	Induction Training	26 weeks
55	Ranjeet Kumar	App.Tech-III	Induction Training	26 weeks
56	Ashok Kumar	App.Tech-III	Induction Training	26 weeks
57	TejBahadur	App.Tech-III	Induction Training	26 weeks
58	Deepak Sharma	App.Tech-III	Induction Training	26 weeks
59	Mahender Prasad	App.Tech-III	Induction Training	26 weeks
60	Brijesh Upadhyay	App.Tech-III	Induction Training	26 weeks
61	Mukesh Kumar	App.Tech-III	Induction Training	26 weeks
62	Raju Kumar	App.Tech-III	Induction Training	26 weeks
63	Dinesh Kumar Verma	App.Tech-III	Induction Training	26 weeks
64	Sunil Kumar	App.Tech-III	Induction Training	26 weeks
65	Jitesh Kumar	App.Tech-III	Induction Training	26 weeks
66	Prabhat Kumar	App.Tech-III	Induction Training	26 weeks
67	Vijay Kumar	App.Tech-III	Induction Training	26 weeks
68	Amit Prasad Gupta	App.Tech-III	Induction Training	26 weeks
69	Ranjeet Kumar	App.Tech-III	Induction Training	26 weeks

70	Sudarshan Chaudhary	App.Tech-III	Induction Training	26 weeks
71	Anupam Kumar	App.Tech-III	Induction Training	26 weeks
72	Pushpendra Kumar	App.Tech-III	Induction Training	26 weeks
73	Sumantkumar	SR. TECH/F	Refresher Course	12 days
74	Tejpal singh	SR. TECH/F	Refresher Course	12 days
75	Mangraoraon	SR. TECH/F	Refresher Course	12 days
76	Laxminarayanmeena	SR. TECH/F	Refresher Course	12 days
77	Ghanshyammeena	SR. TECH/F	Refresher Course	12 days
78	Ajeetkumarmeena	SR. TECH/F	Refresher Course	12 days
79	Bhoorsinghmeena	SR. TECH/F	Refresher Course	12 days
80	Sheru	SR. TECH/F	Refresher Course	12 days
81	Sita ram meena	SR. TECH/F	Refresher Course	12 days
82	Shyamlal	SR. TECH/F	Refresher Course	12 days
83	Gyansinghsokhi	SR. TECH/F	Refresher Course	12 days
84	Jayprakash b. Pandey	SR. TECH/F	Refresher Course	12 days
85	Rajurajput	SR. TECH/F	Refresher Course	12 days
86	Prasantkumarsingh	SR. TECH/F	Refresher Course	12 days
87	Ajay kumar	SR. TECH/F	Refresher Course	12 days
88	Ram praweshshani	SR. TECH/F	Refresher Course	12 days
89	Subhashchandra	SR. TECH/F	Refresher Course	12 days
90	Mukeshkumarmeena	SR. TECH/F	Refresher Course	12 days
91	Nagendrakumarsah	SR. TECH/F	Refresher Course	12 days
92	Ram deenmeena	SR. TECH/F	Refresher Course	12 days
93	Krishna kant s munda	SR. TECH/F	Refresher Course	12 days
94	Sunil kumar	SR. TECH/F	Refresher Course	12 days
95	Shahjadali	SR. TECH/F	Refresher Course	12 days
96	Ashishkumar	SR. TECH/F	Refresher Course	12 days
97	Sharadkumardubey	SR. TECH/F	Refresher Course	12 days
98	Saran mandal	SR. TECH/F	Refresher Course	12 days
99	Santoshkumar	SR. TECH/F	Refresher Course	12 days
100	Verendrakumarbhaskar	SR. TECH/F	Refresher Course	12 days
101	Dhananjaykumar	SR. TECH/F	Refresher Course	12 days
102	Sudhirkumar	SR. TECH/F	Refresher Course	12 days
103	Dharmendrakumar	SR. TECH/F	Refresher Course	12 days
104	Amitkumar	SR. TECH/F	Refresher Course	12 days
105	Jagdish Prasad Meena	TECH-I/P	Refresher Course	12 days
106	Syed Gulam Abbas	TECH-I/P	Refresher Course	12 days
107	Ranjeet Prasad	TECH-I/F	Refresher Course	12 days
108	Ravi Prakash Dubey	TECH-I/F	Refresher Course	12 days
109	Ghanendra P Singh	TECH-I/F	Refresher Course	12 days
110	Subodh Kumar Jha	TECH-I/F	Refresher Course	12 days
111	Anup Kumar	TECH-I/F	Refresher Course	12 days
112	Mahesh Chandra	TECH-I/F	Refresher Course	12 days
113	Ashok Kumar	TECH-I/F	Refresher Course	12 days
114	Bharat Sahu	TECH-I/F	Refresher Course	12 days
115	Krishna Pada Mondal	TECH-I/F	Refresher Course	12 days
116	Rajnish Kumar	TECH-I/F	Refresher Course	12 days
117	Kartik Kumar Sahoo	TECH-I/F	Refresher Course	12 days
118	Sanjay Kumar Meena	TECH-I/F	Refresher Course	12 days
119	Geeta Ram Meena	TECH-I/F	Refresher Course	12 days
120	Upendra Kumar Chauhan	TECH-II/F	Refresher Course	12 days
121	Ramesh Chand Meena	TECH-II/F	Refresher Course	12 days
122	Avdhesh Kumar	Tech-III/F	Refresher Course	12 days
123	Dilip Kumar	Tech-III/F	Refresher Course	12 days
124	IndranathTrivedi	Tech.-I/MW	Refresher Course	12 days
125	Surendrakumarbharti	Tech.-III/MW	Refresher Course	12 days

126	Nand Kishore Nirvan	Sr.Tech	Refresher Course	12 days
127	Nagendra	Sr.Tech	Refresher Course	12 days
128	RohitSurin	Tech-II	Refresher Course	12 days
129	AfjalKuraishi	Tech-I/Fitter	EOT crane operation training	03 days
130	GulfamHussain	Helper	EOT crane operation training	03 days
131	Vishvjeet Kumar Bhartee	Helper	EOT crane operation training	03 days
132	Subhash Kumar Meena	Tech-II	EOT crane operation training	03 days
133	Krishan Pal	Tech-III	EOT crane operation training	03 days
134	RiturajVerma	Tech-I	EOT crane operation training	03 days
135	Arvind Singh Pal	Helper	EOT crane operation training	03 days
136	Chandrabhan	Tech-III	FLT operator training & certification	05 days
137	Sanjay Kumar	Tech-III	FLT operator training & certification	05 days
138	Ram Niwas Kumar	Helper	FLT operator training & certification	05 days
139	Karamvir	Tech-III	FLT operator training & certification	05 days
140	Rajesh Kumar Chaudhary	Helper	FLT operator training & certification	05 days
141	Vikash Yadav	Helper	FLT operator training & certification	05 days
142	Ganga Prasad	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
143	Maheshwar Nayak	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
144	Daya Ram	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
145	YugalKishorJha	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
146	Naib Singh	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
147	Balwant Rao	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
148	Chandra Pal	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
149	MohdTauseefLatif	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
150	Shamsher Singh	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
151	Manoj Kumar Kharera	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
152	Ahshan Jamal	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
153	Satya Prakash	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
154	BhanwarLalMeena	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
155	Mahavir Prasad Meena	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
156	Gaurav Kumar	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
157	JyotishHoro	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
158	NamanBage	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
159	LamboderMajhi	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
160	Munesh Chand Meena	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
161	Indra Lal Meena	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
162	Prakash Chand Meena	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
163	Bahadur Singh Meena	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
164	Sunil Dori	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
165	Jatti Raj Meena	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
166	Dinesh Kumar Meena	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
167	Dharmesh Kumar Meena	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
168	Jagdish Prasad Meena	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
169	Vikram Singh Meena	JE/Mech/WS	Promotion from Artisan to JE	13 weeks
170	Manojkumarmahavar	Sr.Tech/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
171	Rajesh kumarhembrom	Sr.Tech/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
172	Kailashchandmeena	Sr.Tech/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
173	Ata hussain	Sr.Tech/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days

174	Lalitkumar	Sr.Tech/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
175	Jatinderkumar	Sr.Tech/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
176	Vinodkumar	Sr.Tech/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
177	Dinanath Mishra	Tech-I/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
178	Sudama Meena	Tech-I/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
179	Sanjay Kumar	Tech-I/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
180	Bhupendra Meena	Tech-I/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
181	Barun Kumar	Tech-I/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
182	Amar Singh Meena	Tech-I/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
183	Anil Kumar R.Yadav	Tech-I/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
184	DevtaDeen	Tech-I/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
185	Om Prakash Pandey	Tech-I/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
186	Jai Singh	Tech-I/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
187	Dhirendra Kumar	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
188	Ashok Kumar	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
189	AmodToppo	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
190	Tathagat Kumar Samresh	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
191	Anjay Kumar	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
192	Mithun Kumar	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
193	Sandeep Kumar	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
194	Wasukinath Singh	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
195	Sanjay Kumar	Tech-II/Welder	Trg, Testing & Certification ( as per ISO 3834)	06 days
196	Ajay Kumar	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
197	Arjun Kumar Sharma	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
198	Santosh Kumar Sah	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
199	PanditDurganandKalakar	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
200	Shiv Prasad	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
201	Pravin Kumar	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
202	Madan Kumar Sah	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
203	MukeshManjhi	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
204	Ankit Kumar	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days

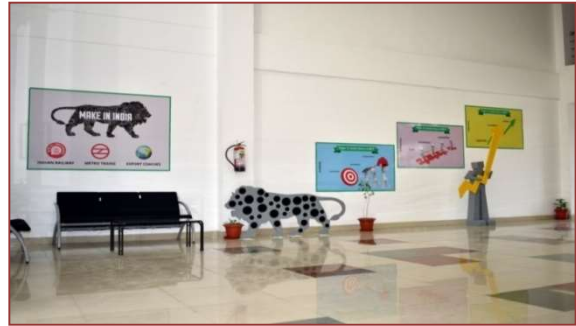
205	Sanu Kumar Sah	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
206	Sunil	Tech-II/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
207	ROHIT YADAV	Tech-III/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
208	NIRANJAN KUMAR	Tech-III/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
209	PRABHAT KUMAR	Tech-III/Welder	Trg, Testing & Certification (as per ISO 3834)	06 days
210	Durgesh	Contractual staff	Safety Training for Contract staff	1/2 day
211	Rohit Trivedi	Contractual staff	Safety Training for Contract staff	1/2 day
212	Mohit Singh	Contractual staff	Safety Training for Contract staff	1/2 day
213	ShivamChaurasiya	Contractual staff	Safety Training for Contract staff	1/2 day
214	Ravi Shankar	Contractual staff	Safety Training for Contract staff	1/2 day
215	S.K Shukla	Contractual staff	Safety Training for Contract staff	1/2 day
216	Jitendra Bahadur	Contractual staff	Safety Training for Contract staff	1/2 day
217	Sarvesh	Contractual staff	Safety Training for Contract staff	1/2 day
218	Balendra	Contractual staff	Safety Training for Contract staff	1/2 day
219	Ram Kumar	Contractual staff	Safety Training for Contract staff	1/2 day
220	Suresh	Contractual staff	Safety Training for Contract staff	1/2 day
221	Rajendra Prasad	Contractual staff	Safety Training for Contract staff	1/2 day
22	Kamlander Singh	Contractual staff	Safety Training for Contract staff	1/2 day
223	Raj Kumar	Contractual staff	Safety Training for Contract staff	1/2 day
224	Ramchandra	Contractual staff	Safety Training for Contract staff	1/2 day
225	Jeetender S Kushawaha	JE/Mech	STTP on Robotic Operation	10 days
226	Avinash Kumar	SSE/Mech	STTP on Robotic Operation	10 days
227	Ruchin Kumar	JE/Mech	STTP on Robotic Operation	10 days
228	Anuj Kumar	JE/Mech	STTP on Robotic Operation	10 days
229	Rahul Kumar	JE/Mech	STTP on Robotic Operation	10 days
230	Anish Kumar Singh	Tech-II	STTP on Robotic Operation	10 days
231	Kapil Choudhary	SSE/RCF	STTP on Robotic Operation	10 days
232	Dharmendra Kumar	JE/RCF	STTP on Robotic Operation	10 days
233	Rizwan Ahmad	Private	STTP on Robotic Operation	10 days
234	Dhanpreet Singh	Private	STTP on Robotic Operation	10 days
235	Aman Singh	Private	STTP on Robotic Operation	10 days
236	KajalKushwah	Private	STTP on Robotic Operation	10 days
237	ShunhamShahi	Private	STTP on Robotic Operation	10 days
238	Akhilesh Singh	Private	STTP on Robotic Operation	10 days
239	Mohd. Anas Ansari	Private	STTP on Robotic Operation	10 days
240	Santoshkumar	JE/Mech	STTP on Robotic Operation	10 days
241	Mukeshkumar	Works Manager	STTP on Robotic Operation	10 days
242	Abhaykumar	AWM/LLH	STTP on Robotic Operation	10 days
243	Anujkumarmishra	AWM/GKPS	STTP on Robotic Operation	10 days
244	Kumudkumar	Prod. Engineer/ER	STTP on Robotic Operation	10 days
245	Bharat indorey	JE/WR	STTP on Robotic Operation	10 days
246	Hitesh sadhuramani	SSE/WR	STTP on Robotic Operation	10 days
247	Makwanachintukumar	SSE/WR	STTP on Robotic Operation	10 days
248	Saurabhkumar	Private	STTP on Robotic Operation	10 days
249	Anujkumar	Private	STTP on Robotic Operation	10 days
250	Rajesh kumar	Private	STTP on Robotic Operation	10 days
251	N. Raghavendragowd	SSE/RBK/SCR	STTP on Robotic Operation	10 days
252	Mallikarjun	SSE/RBK/SCR	STTP on Robotic Operation	10 days
253	Sarveshmishra	JE/AMV	STTP on Robotic Operation	10 days
254	Adnan ahmed	JE/AMV	STTP on Robotic Operation	10 days
255	Om prakashmishra	SSE/Amritsar	STTP on Robotic Operation	10 days
256	Suresh yadav	Private	STTP on Robotic Operation	10 days

257	Biswajeetmandal	Insturctor/STC/KGP	STTP on Robotic Operation	10 days
258	Arunkumarmishra	Lecturer/STC/KGP	STTP on Robotic Operation	10 days

**Photographs**



**Technical Training Centre/MCF/RBL**



**Technical Training Centre Entrance**



**Class Room (4Nos.)**



**Premium Class Room(1 Nos)**



**Technical Training Centre Auditorium**



**Technical Training Centre Conference Room**



**Technical Training Centre Auditorium**



**Technical Training Centre Auditorium**



**Mechatronics Lab**



**Technical Training Centre Hostel**



**Technical Training Centre Library**



**Mechatronics Lab**



**Automation lab**



**Computer labCoach Component Lab**



**Machine Shop**



**Fitting & Carpentry Shop**



**Technical Training Centre Work Shop**



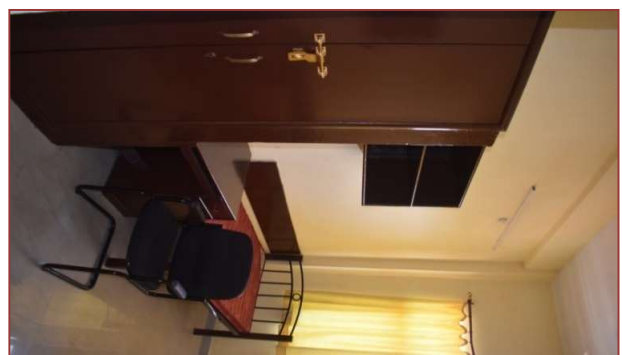
**Welding Shop**



**Technical Training Centre canteen**



**Technical Training Centre Hostel Room for male**



**Technical Training Centre Hostel Room for female**



**Technical Training Centre Hostel canteen  
Entertainment Room**



**Technical Training Centre**



**Technical Training Centre Hostel  
Recreation Room**



**Technical Training Centre Hostel GYM**

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## Annual Report of Project department 2018-19

### History of project:

Modern coach factory, Raebareli is a green field project built on philosophy of using environment friendly sustainable technology for manufacturing processes and use of energy efficient devices with focus on non conventional energy and green buildings. The objective of this project is manufacturing of modern design stainless steel LHB coaches for the Indian Railways.

### Various Mile Stone

Foundation stone laid	Feb'2007
Land acquired	Aug'2007- 09
Construction work commenced	May'2010
Commissioning of 33 KV line	Jan'2011
Finishing & Furnishing shops completed	Apr'2011
First LHB coach furnished (Shell & Bogie by RCF/KXH)	Apr'2011
Dedication of factory to the Nation	Nov'2012
First shell assembly (Major sub assembly by RCF/KXH)	July'2013
First bogie manufacture	Aug'2014
First LHB shell from raw material of stage onward	Aug'2014
Complete bogie assembly	Dec'2014
Rail Coach Factory, Raebareli Renamed as Modern Coach Factory, Raebareli	22 Dec' 15
300 <sup>th</sup> LWACCN Coach Furnished	16 Jan' 16
1 <sup>st</sup> Rake of Humsafar Coaches dispatched	Nov'2016
1 <sup>st</sup> Rake of Antyodaya Coaches dispatched	April'2017
1 <sup>st</sup> Power Car shell manufactured	11 <sup>th</sup> May'17
1000 <sup>th</sup> Shell manufactured	20 <sup>th</sup> May'17
2000 <sup>th</sup> Coach Rolling Out	May'18
1 <sup>st</sup> SMART Coach dispatched	May'18
3000 <sup>th</sup> Coach Rolling Out	Jan'19

### Annual Performance 2018-19

Modern Coach Factory, Raebareli is being set up at the total cost of Rs. 3192 Cr, for producing LHB design stainless steel coaches with production capacity of 1000 coaches per annum. Factory is being setup on turnkey basis and the contract is awarded to M/s IRCON International on nomination basis. During the FY 2018-19, following works got completed:-

### M&Ps Commissioned in 2018-19

S.No.	Machine Name	Qty.	Cost in Lakhs Rs
1	Static Weigh Bridge	01	68.48
2	Nitrogen Pipe Line in side shell shop (LCWM,LCM) & Out side header area	....	54.23
3	Nitrogen Tank 37 bar, 13 KL along with Vaporizer	01	88.26
4	Chain & Wire rope Testing Machine	01	43.33
5	Electric Over Hand Travailing Crane	06	287.28
6	Cable Fault Locating Kit	01	47.00
7	CNC Training Lathe for TTC	01	17.68
8	Accelerated Weathering Tester	01	6.06
9	Hand Trolley	140	16.49
10	CNC Pipe Bending Machine in tool Room	01	149.23
11	MIG CO2 welding sets	129	394.93

12	Box Pallets	1700	110.56
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### Civil works completed and taken over in 2018-19

S.No.	Description of assets	Cost in Rs
1	TYPE-III Qtrs. Sanction in RE(120)	21.00 crores
2	TYPE-III Qtrs. Sanction in RE(156)	24.49 crores
3	Cycle track	83.5 Lakhs
4	Rain water harvesting	469.70 Lakhs

### Electrical works completed and taken over in 2018-19

S/no	Name of work	Amount in LAC
<b>(A) Work under execution with MCF</b>		
	Provision of split pin in Ceiling fans.	1.4
	Provision of spares for power supply arrangement.	66.83
	Provision of air conditioners in Sr. School and OAT buildings.	28.62
	Provision of air conditioners in Mini admin buildings.	16.78

<b>(B) Work under execution with IRCON</b>		
(i)	Construction of new coach blasting shop	218
(ii)	Construction of new type-II (156 nos.) Residential quarters.	216
(iii)	Construction of new type-III (320 nos.) Residential quarters	454
(iv)	External electrical works for type-II and type –III residential quarters.	164
(v)	Design, supply and installation of 1 MW solar plant.	116
(vi)	Other pending payment released	152
	<b>Total Expenditure (FY-2018-19)</b>	<b>1433.63</b>

S/N	Description	Date
1	80 Nos. type –III Residential quarters	10.01.2019
2	1MW solar power plant	08.01.2019
3	Balance CSS no. 1,4&10	10.01.2019
4	Electrical assets of TTC workshop and burial light in admin building	11.01.2019
5	Electrical assets in RUB-II	10.01.2019
6	Sky lift (Bucket ladder)	11.01.2019
7	Cable fault location kit	11.01.2019
8	156 nos. New type –II quarters	25.06.2019
9	External lighting at bungalow, circle and service road to type –V quarters	11.01.2019
10	05 Nos lift in admin building	10.01.2019
11	Power supply arrangement for new CNC lasser cutting machine in shell shop	26.03.2019

### Details of Electrical Assets Taken over from IRCON in FY-2018-19

A work of augmentation of production capacity from 1000 to 2000 coaches per year (Phase-1) is sanctioned vide Pink Book 2018-19 Item No.2 of MCF with # tag). It is decided to run the factory in 3 shifts for getting 1500 coach capacity with the existing facilities. For additional 500 coaches/ annum detailed estimate is sanctioned at the cost of Rs.495.77Cr as detailed below:

Sr. No.	Department	Allocation (Capital)	Estimated value (Rs. In Crs)	Floated 1 <sup>st</sup> Tender opened on 19.11.18
1.	Civil	4260	256.22	137.71
2.	Mechanical	4275	179.99	124.13
3.	Electrical	4277	37.72	14.75
4.	S&T	4278	2.73	2.13
	Total		476.66	280.72
	D&G @ 8.72%	4280	14.00	4280
	Cont. @ 1%	4290	0.00	280.72
	<b>Grand total</b>		<b>495.77</b>	

Technical and financial scrutiny done for first part of tender Counter offer given to firm on 24.05.2019. Funds to the tune of Rs.100.00 Crores only are allotted for FY-2019-20.

Another Proposal for enhancing production from 2000 to 5000 submitted to Railway Board at a cost of Rs.499.37 in Jan -19

### Training Proposal submitted to Railway Board for M&P Operation & Maintenance in 2018-19:-

S.N	Name of Machine	No. of Persons	Cost of Training
1.	CNC Bolster Machine Centre (M/s TOS KURIM Czech Republic)	03	Free of cost
2	CNC Stretch Bending Forming Machine (M/s Cyril Bath, USA)	04	1,50007.50 Rs.
3	CNC Turing Centre (M/s Gildemeister Drehaschinen, Germany)	04	25000 Euros
4	CNC Edge Milling machine (M/s TOS Kurim Czech Republic)	04	236160 Rs
5	CNC Shear Centre (M/s Baykal, Turkey )	04	Free of cost.
6	Automated Wheel & Axle Line (M/s DANOBAT, Bergara, Spain)	29	183,796 Euros
7	CNC Wire Cut EDM Machine (M/s Fanuc Japan)	04	Free of cost
8	CNC Vertical Spindle Moulder Machine(M/s Po Chiao Industry Co.Ltd. Taiwan	04	Free of cost
7	CNC Under water Plasma Profile cutting Machine	04	Free of cost

Sanctioned is awaited, till 12.06.2018.

### Financial Progress:

Total Rs. 137.07 Cr. expenditure has been made during the year 2018-19 against Final modification Rs. 141.85 Cr.

Details of sanction and Expenditure are as given below-

Fig. in Cr. Rs

ITEM	IRCON						VAT/ GST	CRIS/ IT	MCF D&G	Grand Total
	Civil	Mech	Elect	S & T	D&G	Adv				
Sanctioned RE	1396.2	1232.2	283.06	19.77	113.24	0.00	0.0	49.24	98.27	3192.01
FM 2018-19	64.00	60.00	2.50	0.00	6.00	-12.70	14.35	2.70	5.00	141.85
Expenditure in 2018-19	62.41	58.80	2.00	0.00	5.89	-12.30	12.93	2.58	4.76	137.07
Balance work	108.22	257.81	41.78	1.23	37.25	-28.73	-88.93	20.69	36.85	386.17



## **STORES DEPARTMENT**

### **Total Value of stores purchased during 2018-19 PROFORMA-I**

**Annexure-II  
STATEMENT NO. 38-B  
(Rs. IN Crores)**

Sr. No.	Item	Value
A	Imported Direct	17.12
B	Imported Stores Purchased in India	140.63
C	Stores Purchased from PSUs	20.73
D	Khadi Purchase	0.32
E	Stores purchased from Cottage & SSI units	1748.64
F	Other indigenous	587.55
	Total	2514.99

### **Total Value of stores purchased during 2018-19 PROFORMA-II**

**(Rs. IN Crores)**

Sr. No.	Item	Value
A	Stores for operation/repair & maintenance	0
B	Stores for construction	0
C	Fuel	0
D	Components/Stores purchased for manufacture of complete rolling Stock and complete units of Rolling Stock.	2514.99
	Total	2514.99

### **Total Value of stores purchased during 2018-19 PROFORMA-III**

**(Rs. IN crores)**

Sr. No.	Item	Value
A	Through Department of Supply (DGS&D)	0.00
B	Through Railway Board	185.52
C	Direct Purchased made by Railway/PU	2329.47
	Total	2514.99

## VALUE OF STORES PURCHASED DURING 2018-19

(Rs. In Thousand)

SN	Heading	Value of Stores Imported Direct				Value of Imported Stores Purchased in India				Value of Stores Manufactured in India or Indignep				
		Stock	Non-Stock	Consstn Work	Total	Stock	Non-Stock	Consstn Work	Total	Stock	Non-Stock	Consstn Work	Total	G. Total
1	Steam Loco parts and fitting	0	0	0	0	0		0	0	0	0	0	0	0
2	Diesel loco parts and fittings	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Electirc loco parts and fittings	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Carriage,wagon, EMU parts and fittings	171232	0	0	171232	1406355	0	0	1406355	22936	0	0	22936	24513613
5	Electrical Stores	0	0	0	0	0	0	0	0	103550	0	0	103550	103550
6	Signal and Tele-com. Stores	0	0	0	0	0	0	0	0	0	0	0	0	0
7	P.Way material, track, tools etc	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Engg. Stores covering bldg. Material etc.	0	0	0	0	0	0	0	0	0	5037	0	5037	5037
9	Abrasive tools, hardware etc.	0	0	0	0	0	0	0	0	35973	0	0	35973	35973
10	Brushes, brushware etc.	0	0	0	0	0	0	0	0	416	0	0	416	416
11	Indian rubber, leather canvas etc	0	0	0	0	0	0	0	0	118005	0	0	118005	118005
12	Electrode &welding accessories	0	0	0	0	0	0	0	0	69683	0	0	69683	69683
13	Paints, enamels & varnishes	0	0	0	0	0	0	0	0	41743	0	0	41743	41743
14	Crockery, cutlery & napery	0	0	0	0	0	0	0	0	0	169	0	169	169
15	Cloth, clothing & personal equipment	0	0	0	0	0	0	0	0	7627	0	0	7627	7627
16	Petroleum products other than fuel oil	0	0	0	0	0	0	0	0	3689		0	3689	3689
17	Refractories, packing material etc	0	0	0	0	0	0	0	0	17194	0	0	17194	17194
18	Ball & Rollar bearings	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Genl. Stores covering acids chemicals etc	0	0	0	0	0	0	0	0	58523	0	0	58523	58523
20	Stationery forms etc.	0	0	0	0	0	0	0	0	4014	0	0	4014	4014
21	Metal ferrous	0	0	0	0	0	0	0	0	49256	0	0	49256	49256
22	Metal non-ferrous	0	0	0	0	0	0	0	0	97	0	0	97	97
23	Fuel-cock, coil etc.	0	0	0	0	0	0	0	0	0	0	0	0	0
24	fuel-oil	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Timber	0	0	0	0	0	0	0	0	16300	0	0	16300	16300
26	Scrap	0	0	0	0	0	0	0	0	105061	0	0	105061	105061
27	Rolling Stock complete units & stores	0	0	0	0	0	0	0	0	0	0	0	0	0
	<b>Total</b>	171232	0	0	171232	1406355	0	0	1406355	654067	5206	0	659273	25149950

## ANNEXURE-III

## STATEMENT NO 39-A

## Stores Transaction during the year 2018-19

(Rs. In Thousand)

Headings	Opening balance (at the beginning of the year 2018- 19)	Receipts during the year 2018-19)	Issues during the year 2018-19)	Closing balance (at the end of the year 2018-19)
Stream loco parts and fittings	0	0	0	0
Diesel loco parts and fittings	0	0	0	0
Electric loco parts and fittings	0	0	0	0
Carriagel, wagon, EMU parts and fittings	1381443	24513613	22794743	3100313
Electric stores	28384	103550	109954	21980
Signal and Tele-com stores	0	0	0	0
P.Way material, track, tools etc.	0	0	0	0
Engg. Stores covering bldg. Material etc	6426	5037	4133	7330
Abrasive tools,hardware etc,	18200	35973	30497	23676
Brushes, brushware etc.	287	416	418	285
India rubber, leather canvas etc.	22243	118005	116011	24237
Electordes & welding accessories	8387	69683	71918	6152
Paints,enamels & varnishes	3703	41743	43932	1514
Crockery, cutlery & napery	1	169	76	94
Cloth,clothing & personal equipment.	2075	7627	6612	3090
Petroleum products other than fuel oil	872	3689	3976	585
Refractories, packing material etc.	1601	17194	18609	186
Ball & roller bearings	0	0	0	0
Genl. Stores covering acids, chemicals etc.	3081	58523	59838	1766
Staionery forms etc.	1852	4014	3062	2804
Metal ferrous	51405	49256	58242	42419
Metal non-ferrous	23	97	4	116
Fuel-coke, coal etc.	0	0	0	0
Fuel-oil	0	0	0	0
Timber	10039	16300	17463	8876
Scrap	1766	105061	98649	8178
Rolling Stock complete units 7 stores	0	0	0	0
<b>Total</b>	1541788	25149950	23438137	3253601
Adjustments	0	0	0	0
<b>Grand total as per App. Account</b>	1541788	25149950	23438137	3253601

## Annexure IV

## STATEMENT NO. 39-B

## Summary statement of Stores transactions during 2018-19

(Rs. In Crores)

39(B)- Summary Statement of Stores transactions on Govt. Railway in 2018-19									
Opening bal. At the beginning of the yr.				Trans. Of Phy. Stock		Closing bal. At the end of the year			
Phy. Bal without adjustments (7160)	Adjustments (7100)	Balance under (7100 to 7150)	Total stores (7100 to 7160)	Receipts	Issues	Phy. Bal without adjustments (7160)	Adjustments (7100)	Balance under (7100 to 7150)	Total stores (7100 to 7160)
1	2	3	4	5	6	7	8	9	10
131	0.000893	-96.64	34.36	2514.99	2343.81	301.55	0.00089258	-199.55	102



## Accounts

### 1 PROJECT

The project estimate was originally sanctioned under Capital 4200 (Raebareli-setting up of new Modern Coach Factory) at the cost of Rs. 2556.84 crore which has been revised to Rs 3192.00 crore vide letter no. 2016/M(W)/964/3 dated 21/05/2016

The Total expenditure under final heads for fixed assets and M&P is Rs 2806.84/- crore upto March, 2019. This includes expenditure incurred on project cost of MCF (Capital) 4200 and machinery & plant (Cap-4100).

The Closing balance of floating assets (Inventories Cap-7100, Cap-7200 and Cap-7300) is Rs. 185.51 Crore. The break-up of fixed and floating assets is as under:-  
Fig in Crore

I.Fixed Assets	Amount.	Break up of Fixed Assets by important Categories:	
		Fixed Assets	Amount.
Project township (Land)	51.87	Preliminary Expenditure	16.55
Project township (Structural Engineering Works)Building)	1250.06	Land	51.87
W/s & Offices	1504.91	Machinery and Plant Electrical installation	1462.23
<b>Total fixed Assets (a+b)</b>	<b>2806.84</b>	Buildings and Other structural Enng. Works including Road & permanent way	1250.06
<b>II. Floating Assets</b>	<b>Amount.</b>	General Charges	26.13
a) Stores Suspense	129.71	<b>Total Fixed Assets.</b>	<b>2806.84</b>
b) W/s. Mfg. Suspense	55.80		
<b>Total Floating Assets (a+b)</b>	<b>185.51</b>		
<b>Total Assts.</b>	<b>2992.35</b>		

(2)

### 2-0 STATEMENT SHOWING DEPRECIATION RESERVE FUND ACCOUNT FOR AND TO END OF THE YEAR 2018-19

(fig. In units.)

Sl.No.	PARTICULARS	AMOUNT
1	Opening balance	NIL
2	Appropriation during the year 2018-19	NIL
3	Interest during the year @ 5%	NIL
4	Total (2+3)	NIL
5	Expenditure on renewals & replacement during the year 2018-19	NIL
6	Net accretion to the fund during the year 2017-18 (4-5)	NIL
7	Closing balance (Col. 1+6)	NIL

	Details of Grant for 2018-19	NIL
	Original Grant	NIL
	Supplementary	NIL
	Residual	NIL
	Final Grant	NIL

**3-0 STATEMENT SHOWING PENSION FUND ACCOUNTY FOR AND TO END OF THE YEAR 2018-19.**

(fig. In units.)

Sl.No.	PARTICULARS	AMOUNT
i	Opening Balance(01.04.2018)	-23582958
ii	Appropriation to fund during the year 2018-19	60000000
iii	Transfer from contribution of PF	0
iv	Total (ii+iii)	60000000
v	Withdrawals during the year 2018-19	32921000
vi	Net accretion during the year 2017-18 (iv-v)	27079000
vii	Interest on fund balance @ 5.75%	-577499
viii	Closing balance (i+vi+vii)	2918543
	Details of Grant for 2018-19	
	Original Grant	60000000
	Supplementary	0
	Residual	-27621000
	Final Grant	32379000

**4-0 MANUFACTURING SUSPENSE ACCOUNT FOR THE YEAR 2018-19**

Sl.No.	DEBIT SIDE		CREDIT SIDE (Rs in Unit)	
	PARTICULARS	01/04/2018-31/03/2019	PARTICULARS	01/04/2018-31/03/2019
(A)	01. Work in Progress as on 01/04/2018	626034343	01. TRANSFER TO RLY	0
<b>Total (A)</b>		<b>626034343</b>	(i) SUPPLY OF COACHES	27079181048
<b>B- LABOUR</b>			(ii) MISC SUPPLIES	0
1	WORKSHOP DIRECT LABOUR	270034938	01. BY CAPITAL STORE	0
2	INDIRECT LABOUR	410918113	(i) MANUFAC TURING	0
3	SALARY AND ALLOWANCES OF ADM	594599456	(ii) RETURNED STORE	0

4	WORK CONTRACT	347828959	03.BY CAPITAL WORK DONE PLANT AND MACHINARY & OTHER WORK	0
5	SALARY AND ALLOWANCES OF STORE	55157279	04. BY WORK DONE ON DEPOSIT ACCOUNT	0
6	SALARY AND ALLOWANCES OF TOWNSHIP	106210619	<b>TOTAL CREDIT</b>	<b>27079181048</b>
<b>TOTAL LABOUR</b>		<b>1784749364</b>	05. BY EXPORT	0
<b>C- STORE</b>			06. BY CLOSING BALANCE (WIP AS ON 31/03/2018)	<b>639150105</b>
1	STORE DIRECT FROM STOCK	23064420049		
2	STORE DIRECT FROM DDO	2453368891		
3	ADJUSTMENT	-127,86,370		
4	INDIRECT STORE (FOH)	172027997		
5	FOH DDO	65280826		
6	FOH ADJUSTMENT	226341		
7	INDIRECT STORE (AOH)	23,33,169		
8	AOH DDO	232397200		
9	AOH ADJUSTMENT	3318874		
10	INDIRECT STORE (SOH)	0		
11	SOH DDO	145438450		
12	SOH ADJUSTMENT	-37,01,945		
13	INDIRECT STORE (TOH)	0		
14	TOH DDO	32748957		
15	TOH ADJUSTMENT	0		
16	RETURNED STORE	-39777122		
17	MISC. ADJ. (TR) DR/CR FROM/TO	-944066342		
<b>TOTAL -STORES</b>		<b>25171228975</b>		
<b>D-OTHER CHARGES</b>				
1	APPRO. TO PENSION FUND	32379000		
2	AOORO. TO DRF	0		

3	APPRO. TO SBF	27,17,260		
4	ELECTRICITY (POWER)	107684338		
5	STOCK ADJUSTMENT	0		
6	FRIEGHT INDIRECT	0		
7	MISC. INDIRECT	0		
<b>TOTAL -OTHER CHARGES</b>		<b>142780598</b>		
<b>(E) RECOVERIES</b>				
1	RECEIPT ON RENT AND WATER	-28,81,856		
2	RECEIPT ON ELECTRICITY	-35,80,271		
<b>TOTAL- RECOVERIES</b>		<b>-64,62,127</b>		
<b>(F) TOTAL( WITHOUT OPENING BAL.)=(B+C+D+E)</b>		<b>270922,96,810</b>		
<b>(G) TOTAL (WITH OPENING BAL.) =(A+F)</b>		<b>277183,31,153</b>	<b>TOTAL</b>	<b>277183,31,153.00</b>



## Civil Engineering Department

### General-

- 1.1 Modern Coach Factory, Raebareli is a Coach Production Unit of Indian Railway, situated at town Lalganj in District Raebareli. It is spread over large area of 540 Hectares of land. Out of this workshop area is 167 hectare, township area 354 hectares and remaining 19 hectares is used in rail connectivity from Lalganj Railway Station to workshop.
  - 1.2 Workshop comprises approx. 1.93 lakh sqm covered structures. Total 1628 staff quarters (1028 type-II, 440 type-III, 160 type-IVDS) and 121 officers quarters (70 type-IVSS, 46 type-V, 5 type VI & above) completed and allotted up to financial year 2018-19. Construction of balance 94 type-II quarters, 200 type-III quarters & 120 type-IV quarters is in progress. Apart from it, sanction of 120 type-III quarters and 2 type-VI quarters is available.
  - 1.3 Various service buildings in workshop and township, availability of full-fledged hospital, separate rest houses and clubs for workers, supervisors and officers, welfare centre, Nursery & KV School, Shopping complex, technical trainee & sport hostel. Entire indoor & outdoor sport facility, 3 MW solar power plant, a green environment and 60 hectare area Eco-Park with 5 large ponds.
  - 1.4 Cost of entire civil engineering assets of MCF is approximately Rs. 1225 Crore. Now Workshop is being augmented from production capacity of 1000 coaches per year to 2000 coaches per year.
  - 1.5 Forestation of 40000 trees in township & workshop was done in consultation with Forest Department UP. Including this total plantation done so far in MCF is 77000 trees. Nature of soil in MCF is alkali (Usar). Efforts are being made to cover entire area of campus with plantation/greenery and maintain it suitably. On the basis of NBRI report plantation of 15000 number of additional trees and construction of 15 number of small bio-compositing unit is in progress.
  - 1.6 Green Co. certification for workshop was initiated and got with platinum rating. Main emphasis is given on conservation of natural resources and to provide green & eco friendly environment. Entire sewage of workshop and township is being treated in STPs (capacity 1.1MLD + 0.4 MLD in township and 1.1 MLD in workshop). Entire treated water is being used in irrigation of greenery.
  - 1.7 Assets are being maintained regularly on planned manner with minimum departmental labour. General sanitation & horticulture activities are being outsourced along with other civil engineering maintenance works & special sanctioned works. Efforts of Civil Engg. Deptt. are to maintain assets regularly in due time with economical methods. All efforts are being made to maintain pollution free and pleasant environment in this Production Unit of Indian Railways.
  - 1.8 Pre-fabricated structure with double layered roof sheeting has been used in various sheds of workshop. Large window openings with adjustable louvers have been provided to reduce the effect of heat in summer in most workshop structures, Sky lights have been provided in roofs to facilitate day light and conserve electricity.
- 2.0 Organisation setup-**
- 2.1 Civil Engineering Department is headed by Principal Chief Engineer, who is assisted by 2 Dy. CE & 4 XENs/AXENs.

Detail of sanction/on roll staff in engineering department is as under;

Category		Sanc. Strength	On Roll	Vacancies
Officers		12	06	06
Group 'C'	Supervisor	22	14	08
	Ministerial	13	08	05
	Artisan	27	12	15
Group 'D'		42	23	19
Total		116	63	53

There are 8 SSE/JE/W to maintain building & structures and maintain rail connectivity network along with handling of special sanctioned and project works.

### 3.0 Main Features-

#### 3.1 Water Supply

There are 3 tube wells in colony and 2 tube wells in workshop each with pumping unit. Requirement of water supply in colony as well as in workshop is met with through 200mm dia, deep tube-wells (320m to 360m) having enough yield. Water from the tube wells is pumped to over head tanks. Total capacity of available 5 over head tanks is 2025 KL. Individual capacity and location of these over head tanks is as under.

OHT No.	Location	Capacity (KL)	Staging
OHT 1	Near type-II Colony in township	600	22 m high
OHT 2	Near type-V Colony in township	300	22 m high
OHT 3	Near type-IVDS Colony in township	450	22 m high
OHT 4	Near Gate No. 2 of Workshop	225	22 m high
OHT 5	Near MRS of Workshop	450	22 m high

Total length of main water pipe line in township is 25.50 km and in workshop is 16.00 km.

Average daily requirement of water is about 3050 KLD (2000 KLD for Township and 1050 KLD for Workshop). Every effort are being made to reduce consumption of ground water by providing push cock type taps at public places and prevent leakages from roof top tanks. This demand will further reduced drastically after commissioning of distribution network of treated effluent for irrigation of lawns/greeneries in workshop and parks, service buildings, playgrounds and Type-IV & V quarters in township.

#### 3.2 Rain Water Harvesting

Water requirement of MCF is met through ground water. To prevent depletion of ground water table of the area with the passage of time, an exhaustive plan of 21 number RWH (16 Nos. in Township and 5 nos. in Workshop) with annual recharge capacity 364 ML which is more than statutory requirement of 25% of extract quantity.

#### 3.3 Fire Fighting Arrangements

Sufficient fire hydrants at strategic points in the workshop, administrative building and public places like auditorium and school have been installed to meet emergency requirement. 1 static ground water tanks of capacity 900KL and 01elevated tank of capacity 332KL has been provided.

#### 3.4 Sewerage System

Sewerage system is separate from storm water drains. The sewage is carried to sewage treatment plants (STP) 1.1 MLD near type-II colony, 0.4 MLD near type-IVDS colony and 1.1 MLD in workshop. These STPs are working on SBR technology. The details of sewers are as under.

SN	Description	Length(meter)	
		Workshop	Township
1	SW 200mm dia	4537	7725
2	SW 250mm dia	2011	2410
3	SW 300mm dia	-	888
4	RCC pipes 300mm dia	-	904
5	RCC pipes 350mm dia	465	1185
6	RCC pipes 400mm dia	696	-
7	RCC pipes 450mm dia	210	1907
8	RCC pipes 500mm dia	-	1588
9	RCC pipes 600mm dia	-	2142
10	RCC pipes 600mm pipe NP2	-	50
11	RCC pipe 800 mm Pipe	-	3370
Total		7919	22169

### 3.5 Storm water drains-

Entire MCF complex has a well planned open drainage and covered drainage system network which is ultimately discharge into natural drain (Mathana Nala) available in campus. Drainages are planned along both sides of main roads. To ensure proper functioning of storm water drains cleaning of drains before on set monsoon is being ensured. Detail of storm water drainage is as under;

SN	Description	Length(Meter)	
		Workshop	Township
1	RCC covered drain	9015	5000
2	RCC open drain	6296	15000
3	Brick drain (open)	-	9000
Total		15311	29000

### 3.6 Service roads-

There is well planned service road network. Details of road is as under

SN	Description of Road	Area(Sqm)	
		Workshop	Township
1	CC Road	82785	-
2	Bituminous Road	11123	219257

### 3.7 Other features of Civil Engineering Department of MCF are as under

#### (i) Land

Private land	283 Hectare
Govt land	189 Hectare
Gram Sabha land	68 Hectare
Total	540 Hectare
Book Value	60 Crore (Approx.)

#### (ii) Boundary Wall (km)

Township	10.78 Km
Workshop	5.50 Km
Total	16.28 Km.

Entire premises of MCF/RBL are enclosed with gap less boundary.

#### (a) Fencing/boundary wall of assets

Location	Brick walled	Fabricated concrete panel	Expansion metal/chain link fencing	Total length (Meter)
Township	14013	1107	30555	45675
Workshop	3457m	0	0	3457
Total	17470	1107	30555	49132

### 3.8 Residential Accommodation

Type	No. of quarters
II	1028
III	440
IVDS	160
IVSS	70
V	46
VI	4
GM Bungalow	1
Total	1749

### 3.9 Workshop Structures (sqm)

(i)	Covered area	=	269800
(ii)	Un-covered area	=	139318

### 3.10 Other Structures (sqm)

(i)	Service Buildings	=	6858
(ii)	Anc. Build. in Workshop	=	8600

### 3.11 Welfare Buildings (sqm)

(i)	Township	=	17560
(ii)	Workshop	=	3850

### 3.12 Track

Description	Length(Km)
Ballasted Track	7.905
Embedded Track	13.318
Points & crossing	17Nos

### 4.0 Expenditure during financial year 2018-19

(Rs. in Th)

SN	Plan head	Allocation	Expenditure
1	4200	Cap	750390
2	7200	WMS	72553
Total			822943

### 5.0 Major Achievement of the year 2018-19

- Construction of 200 type-III quarters.
- Development of Greenery in the MCF campus (plantation of 6403 number trees).
- Development of 09 holes golf ground cum Ecopark with greenery & natural ponds.
- Engineering Earning of MCF/RBL under lease rent etc is Rs. 5.25 crores (approx).
- Civil engineering assets of Amount Rs. 61.37 Crore have been taken over from M/s IRCON in this year.
- Cleaning of 20 hectare of wild area in workshop & approx 40 hectare wild area in township. This wild area was not cleaned earlier.
- Bill of amount Rs. 61.37 crore received from M/s IRCON has been cleared in financial year 2018-19.
- Construction of boundary wall of worker's club, ORH & Club, Supervisors club, hospital & TTH.
- Water recycling pipeline network to use STP treated water in irrigation of Eco work.
- Cycle path in township

### 6.0 Major work planned and in progress of the year 2018-19

- Contract awarded during 2018-2019
- Plantation-15000 trees and 200000 sqm lawns in township & workshop.
- Construction of 94 type-II, 200 type-III (80 by MCF & 120 by M/s IRCON) and 120 type IV quarters is in progress.
- Installation of highest monumental national flag in progress.

- Provision of sprinkler irrigation system by use of STP-II water
- Development balance portion of Eco-park and rest 9 holes of golf with 60 hectare area.
- Development of 5 big artificial ponds in Eco-park.
- Construction of walkway near central park.
- Provision of tile flooring in old type-II & type-III quarters
- Extension of shopping complex.
- Addition of main hall & badminton courts in worker club.
- Construction of sport hostel & ORH.
- Construction of 8 room new ORH near SRH.
- Construction of parking facilities in Hospital, TTH, ORH & RPF barrack.
- Construction of security watch tower in MCF Township.
- Conversion of 10 type-V quarters into type-VI quarters.
- Concrete flooring in workshop.
- Civil assets maintenance contract of Township & Workshop have been awarded successfully in this year.
- Modernization of Alambagh workshop (Phase-I&II) and Kota Workshop (Phase-I & II) are in progress.

\*\*\*\*\*



## Personnel Department

Over all Cadre position of MCF/RBL as on 31.03.2019 after ministerial cadre restructuring:-

S.No.	Category	Revenue	W/C	Total	On roll	Vacancy
1	Gazetted	148	24	172	142	30
2	Supervisors	344	54	398	353	45
3	Artisan	1279	00	1279	1243	36
4	Ministerial	239	11	250	195	55
5	Others (A/C, RPF, Med. G. Branch)	150	16	166	91	75
6	Group-D	389	14	403	329	74
<b>Total</b>		<b>2549</b>	<b>119</b>	<b>2668</b>	<b>2353</b>	<b>315</b>

a) Cadre of Gazetted Officers:-

The staff strength of Gazetted cadre during the year 2018-19 is given below:-

S.No.	Category	Revenue	W/C	Total	On roll	Vacancy
1	HAG+	01	00	01	01	00
2	HAG	03	01	04	04	00
3	SAG	16	06	22	21	01
4	SG/JAG	35	11	46	42	02
5	SS	35	04	39	22	17
6	JS/Group-B	58	02	60	52	07
<b>Total</b>		<b>148</b>	<b>24</b>	<b>172</b>	<b>142</b>	<b>30</b>

b) Cadre of Non-Gazetted Staff:-

The staff strength of Non-Gazetted cadre after Ministerial cadre and Artisan cadre restructuring during the year 2018-19 is given below:-

S.No.	Category	Revenue	W/C	Total	On roll	Vacancy
1	Supervisors	344	54	398	353	45
2	Artisan	1279	00	1279	1243	36
3	Ministerial	239	11	250	195	55
4	Others (A/c, Security, Gen. Admn, Med.)	150	16	166	91	75
5	Group-D	389	14	403	329	74
<b>Total</b>		<b>2401</b>	<b>95</b>	<b>2496</b>	<b>2211</b>	<b>285</b>

2 a) Work Charged Gazetted Posts:-

The details of work charged/temporary gazetted posts created/Extended during the year 2018-19 are as under:-

S.No.	Deptt.		Grade	Period of Currency	
				From	To
1.	Mech.	1	01 HAG	01.07.2017	31.12.2018
		2	02 SAG		
		6	06 JAG/SS/JS		
2.	Per.	1	01 SAG	01.07.2017	31.12.2018
		3	03 JAG/SS/JS	01.07.2018	30.06.2019
3.	Acct.	1	01 SAG	01.07.2017	31.12.2018
		3	03JAG/SS/JS	01.07.2018	30.06.2019
4.	Store	1	01 SAG	01.07.2015	30.06.2016
		3	03 JAG/SS/JS	01.07.2018	30.06.2019
5.	Civil	1	01 SAG	01.07.2017	31.12.2018
		1	01 JAG/SS/JS	01.07.2018	30.06.2019
6.	S&T	1	01 JAG/SS/JS	01.07.2018	30.06.2019
Total		24			

b) Work Charged Non-Gazetted Posts:-

The details of work charged non-gazetted posts operated during FY 2018-19 are as under:-

S.No.	Deptt.	No. Of Posts	Period of Currency	
			From	To
1.	Supervisor	52	01.04.2018	31.03.2019
2.	Supervisor/Store	02	14.01.2019	13.01.2020
2.	Ministerial	08	01.04.2018	31.03.2019
3.	Others (Accounts)	16	01.07.2018	30.06.2019
	Medical	02	14.01.2019	13.01.2020
	CLA/Personnel	01	29.03.2019	28.03.2020
4.	Group 'D/Accounts	7	01.07.2018	30.06.2019
	Group D/All Deptt.	7	01.04.2018	31.03.2019
Total		95		

3. Indent Position:- The detail of Indents placed and panel received during the year 2018-19 are as under:

Category	Indent placed	Panel received	Balance	Remarks
JE (P.Way)	01	---	01	
JE (Works)	03	---	03	
Track Maintainer (Civil)	13	---	13	
TCM-III	02	---	02	
SSE/D&D	00	---	00	
JE/D&D	07	---	07	
Sr. Clerk	13	---	13	
Others (Med & G branch)	12	---	12	
Total	51		51	

4. APPOINTMENT IN GROUP C&D AGAINST VARIOUS QUOTAS:-

The detail of appointments on various quotas during the year 2018-19 is as under:-

S. No.	Category	For the year 2018-19
1	Compassionate Ground	3
2	Sports Quota	0
3	Ex-Serviceman Quota	0
4	Physical Handicapped Quota	0

5	Crash Programme for wiping out shortfall of SC/ST	0
6	Casual Labour absorbed	0
7	No. of Staff Recruited Scout/Cultural Quota	0
8	Sub. B/Kh	----
<b>Total</b>		<b>03</b>

5. **Engagement of Act Apprentices:**

During the FY 2018-19, 53 candidates were engaged under the Act Apprentices and send for Training in Technical Training Centre, MCF/Raebareli.

6. **Settlement Dues:-Total no. of cases in which payment of settlement dues has been made during the year 2018-19.**

S. No.	Nature of Settlement	No. of Cases received	No. of Cases Settled	Balance Cases
1	Superannuation	07	07	00
2	Voluntary Retirement	02	02	00
3	Compulsory Retired	00	00	00
4	Resignation	06	06	00
5	Removal, Dismissal & Others	22	22	00
6	Medical Unfit Cases	00	00	00
7	Death Cases	01	01	00
<b>Total</b>		<b>38</b>	<b>38</b>	<b>00</b>

7. **PROMOTIONS:-**

During the year selections, suitability & Trade Test were conducted. 811 Non-Gazetted employees of various categories have been promoted. 13 employees of various departments have been promoted to Group "B" Gazetted posts.

Besides, this all MACP cases due during the financial year have been finalized.

S.No.	Category	Number of staff promoted this year.
1	Gazetted	13
2	Supervisor	44
3	Ministerial	13
4	Artisan	754
<b>Total</b>		<b>824</b>

8. **Recruitment:-**

13 candidates have been recruited in the following categories during the period of 2018-19.

S.No.	Category	Recruited
1	Supervisors	01
2	Ministerial	03
3	Technicians	09
4	Group-D	00
<b>Total</b>		<b>13</b>

9. **BONUS:-**

In the years 2018-19 Group-C&D staff of MCF/RBL has been Paid productivity linked Bonus detail of which is given below:-

No. of Employees 2018-19	Productivity Linked Bonus (In Rs.)
2394	3,90,30,826

#### 10. Salary Payment during 2018-19:-

No. Of Staff	Amount Paid
Gazetted	20,05,90,332
Non Gazetted	1,16,91,19,687
<b>Total</b>	<b>1,36,97,10,019</b>

#### 11. Disbursement of Advances for the year 2018-19:-

Following advances on various accounts had been disbursed during the year 2018-19:

HEADS	FUND ALLOTTED	FUND PAID	FUND BAL.	No. of Staff	Remark
HBA	15,00,000	0	15,00,000	0	
M.CAR	0	0	0	0	
M.CYCLE/ SCOOTER	0	0	0	0	
COMPUTER	27,25,000	27,00,000	25,000	54	
CYCLE	0	0	0	0	
<b>TOTAL</b>	<b>42,25,000</b>	<b>27,00,000</b>	<b>15,25,000</b>	<b>54</b>	

#### 12. Online Portals being operated at MCF/RBL:-

- ARPAN
- COMPTRAN
- CPGRAMS
- NIVARAN
- Mobile Apps

#### 13. Industrial Relation:-

During the year 2018-19, the industrial relations have remained cordial at MCF/ Raebareli with not even a single incident of unrest or indiscipline.

#### 14. Staff Contact and Grievance handling:-

Staff & Welfare Inspectors visited every day in shop floor from 10:00 AM to 12:00 PM and contacted employees to collect the grievance for disposal within stipulated time.

- Total 121 complaints were collected and disposed of.
- 59 complaints registered in NIVARAN Portal & all complaints cases have been disposed.
- 56 complaints registered in CPGRAMS postal & all registered complaints have been disposed.
- 494 complaints registered in Mobile Apps online portal, and have been disposed of.
- 1<sup>st</sup> May (Labour Day) was organized as an Employee Grievance Collection Camp in various place of campus. All the grievances pertaining to the camp have been disposed of.

#### 15. Staff Welfare

- A full-fledged Kendriya Vidyalaya is in operation from November, 2013. In the academic session 2018-19 for classes up to 11<sup>th</sup> standard with two sections in each classes-I to IX and one section in XI, a total of 784 students were enrolled which is almost double in comparison with last year's data of 389 students.
- A Pre-school named Gyanda Bal Mandir is being run by MCFWWO for the children of employees of MCF/RBL. It is running with 03 class rooms and having a well equipped playroom, kitchen and playground for the children. The school was shifted in bigger building this year where other extracurricular activities are now possible.

- Facilities of Loan & membership for Staff of MCF, RBL got co-opted with NR Primary Co-op society of Lucknow.
- Evening classes of Polytechnic are being arranged in MCF campus for MCF employees where more than 100 employees are taking the benefits.
- Competition of debate in subject of “Effect technology on new generation” on 10.04.2018 and educational seminar on 13.04.2018 was organised at Saraswati Auditorium, MCF/Raebareli.
- Personnel Department has launched mobile APP to all officers and employees to facilitate them to upload their grievances.
- Appointment of Homeopathy Doctor under Staff Benefit Fund was made on 08.07.16 at MCF Hospital. There is regular service in Homeopathy Dispensary for MCF employees at Rly. Hospital.
- Battery operated 06 E-rickshaws are being operated by Welfare section in MCF campus for public transportation.
- Modern Coach Factory, Raebareli has taken initiative towards development of OBCs residing in peripheral of this Factory’s boundary. For the purpose of employment of OBCs, MCF has started free training to OBC candidates under skill development programme with the assistance of NBCFDC. MCF started training in five courses, their details and number of candidates to whom training has been imparted, is give below :-

S.No.	Name of Training Institute	Name of the course	Number of candidates
1	Central Institute of Plastic Engineering & Technology (CIPET)	Machine Operator Asst. Plastic processing	80
2	Apparel Training and Design Centre (ATDC)	Sewing Machine Operator	90
3	The National Institute for Entrp. & Small Business Dev. (NIESBUD)	Fashion Designing and Boutique Manager & Sewing Machine Operator	100
4	Furniture & Fitting sector skill council (ATDC)	Assistant Carpenter and Wooden furniture	100
5	Beauty & Wellness Sector Skill Council	Assistant Beauty Therapist	140

Results of these training came in a very positive manner. In the first phase, 63 candidates have completed their training in plastic sector. Out of these, 58 candidates have been given employment in private sector companies like M/s Alpa India Pvt. Ltd, Himanchal Pradesh M/s Microplast Industries, Gurgaon M/s ATC Precision Components Pvt Ltd, Gurgaon & M/s Sanjay technoplast Pvt. Ltd, Aurangabad.

- An awareness camp & skill development training programme was organised on 12.04.2018 at Balheshwar Mandir, Aihar, Raebareli by NBCFDC. Free health check-up of villagers was also conducted free of cost with advice and supply of General Medicine.



- Three day meditation programme “Being Capable” was organised at MCF/RBL from 26/04/2018 to 28/04/2018, where Shri Pankaj Shukla imparted training on stress Management.

- A Seminar of NBCFDC for skill development was organised on 21.05.2018 at Saraswati Auditorium of MCF/RBL and in this seminar around 697 students have been enrolled for free training under skill development in various trades.



- Children Poster painting competition on Plastic free MCF subject was successfully organised at Indoor Stadium on 02/07/2018.



- Pradhan Mantri Suraksha Bima Yojana (PMSBY) & Pradhan Mantri Jivan Jyoti Bima Yojana (PMJJBY), a camp was organised on 12.09.2018 at Mini Admin conference room MCF/Raebareli.



- Swachhta Pledge & Swachhta Prabhat Pheri was organized at Shopping Complex, Prashanti Parisar, MCF/Raebareli on 15.09.2018. This programme was organised spreading awareness of cleanliness among staff and their family.



- Swachhta Pledge was administered by Shri Rajesh Agarwal the then General Manager/ MCF/RBL on 15.09.2018.



- Essay writing & Poster Painting competition for wards of employees on the subject “Swachhta Hi Sewa” was also organised at Kendriya Vidyalaya, MCF/Raebareli on 24.09.2018.



- Display of painting of wards of employees & Nukkad Natak on culmination day of Swachhta Pakhwara on 02.10.2018 was organised at shopping complex of MCF.



- Modern Coach Facotory/Raebareli Scouts Guides team participated in NRBS & G vocational Craft Camp at New Delhi on 26.10.2018 to 30.10.2018.



- A camp for Government Scheme of Prandhan Mantri Awas Yojana was organised on 17.11.2018 at Seminar hall, Administrative Building /MCF/RBL.



- Award for Poster Painting & Essay writing competition was distributed at Kendriya vidyalaya/MCF/RBL on 22.11.2018



- Award for essay writing on “Cleanliness” was distributed at Meeting Hall, P. Branch/MCF/RBL/ on 29.11.2018.



- Lord Baden Powell’s birthday was celebrated held on 22.02.2019 by NRBS&G, District Raebareli at Kendriya vidhyalaya, MCF/RBL



## 16. Staff Benefit Fund:-

The staff Benefit Fund Committee continued to function effectively and satisfactorily. Brief particulars of disbursements made for various objectives are as under:-

Description	Expenditure in Rs.
Education-scholarship for Higher Technical/professional education for wards of staff in grade pay of above Rs.2400/- and up to Rs. 4200/-	7,09,150.00
Scholarship for Higher Technical/professional education of Girls of Staff in grade pay up to Rs. 2400/-	54,000.00
Scholarship for Higher Technical/professional education of Boys of Staff in grade pay up to Rs. 2400/-	18,000.00
Women Empowerment Activities.	2,74,916.00
Recreation other than sports	1,29,620.00
Recreational facilities at Institutes and Clubs etc.	3,00,000.00
Promotion of Cultural Activities	Nil
Relief of distress and Scheme of Sickness.	44,000.00
Indigenous system of Medicines including Homeopathic.	2,09,978.00
Immediate relief in times of crisis arising out of floods, famines, landslide, fire or any other calamity.	Nil
Developing occupational skills of Physically & Mentally/Challenged railway employees and their words.	92,832.00
Miscellaneous	3,30,214.00
<b>Total</b>	<b>21,62,710.00</b>

### Canteen (Factory premises and Admn. Building):-

One modern and well equipped statutory Staff Canteen has been established in workshop area, which caters to the needs of more than 2500 employees, in supplying Tea/Snacks/Cold-drinks and meals (lunch) etc. There is also a canteen running in Administrative block.



- Team MCF successfully organized first Children Camp-2018. Children visited different scenic places of Nainital and Ranikhet w.e.f 06.06.2018 to 12.06.2018.



- A cultural Programme was successfully organised by the children who had participated in first children camp at Nainital & Ranikheton 14/07/2018 at Saraswati Auditorium.



- A scholarship distribution programme under staff benefit fund (SBF) was organised on 27.09.18 at Worker's club/MCF/RBL, 40 children were benefitted by scholarship for higher education through SBF.



- The first Divyang employees camp-2019 was successfully organised at Chitrakoot & Khajuraho on 12.02.2019 to 14.02.2019 by MCF team. Divyang employees of MCF/RBL visited different scenic and religious places of Chitrakoot and Khajuraho.



- Team MCF successfully organised one day Camp of Women Employee-2019 at Kanpur & Bithoor on 10.03.2019. In this camp Women Employee of MCF/RBL visited different tourist spots and religious places of at Kanpur & Bithoor.



- Distribution of 47 Bicycles to the girl students of MCF's employees studying in Class IX- Class XII from Staff Benefit Fund on 30.03.2019 at Saraswati Auditorium MCF/RBL.



### 17. Celebration of various important events/days:-

Important events during 2018-19 like Independence Day, Republic day, Ambedkar Jayanti & Mahaparinirvan Diwas etc. were organized with full enthusiasm.

- Independence Day Celebration



- Republic Day Celebration



- Dr. B.R. Ambedkar birthday celebrated on 16.04.2018 at TTC Auditorium MCF/RBL
- Dr. B.R. Ambedkar Mahaparinivan Diwas



- **OBSERVANCE OF ANTI-TERRORISM DAY :-**

Anti-Terrorism Day was observed on 21 May, 2018. All officers took pledge in main entrance hall in administrative building and staff took pledge at their respective work place through their controlling officers.



- **OBSERVANCE OF SADBHAVANA DIWAS :-**

Sadbhavana Diwas celebrated successfully on 20 August, 2018. All officers took pledge in main entrance hall in administrative building and staff took pledge at their respective work place through their controlling officers.



- **OBSERVANCE OF THE BIRTH ANNIVERSARY OF LATE SARDAR VALLABH BHAI PATEL “ RASHTRIYA EKTA DIWAS”(NATIONAL UNITY DAY):-**

Rashtriya Ekta Diwas (National Unity Day) was observed on 31 October, 2018. All officers took pledge in main entrance hall in administrative building and staff took pledge at their respective work place through their controlling officers.



- **OBSERVANCE OF SHAHEED DIWAS:-**

Shaheed Diwas was observed on 30 January, 2019. All officers along with staff observed two minute silence at their workplace.



## 18. Activities of MCFWWO

One of the major activities of MCFWWO is to run the play school named Gyanda Bal Mandir, for the children of employees of MCF/RBL. It is running with 03 class rooms and having a well-equipped play room, kitchen and play area for the children. The school holds various functions on all important dates like Republic day, Independence day, Children's day and Teacher's day.



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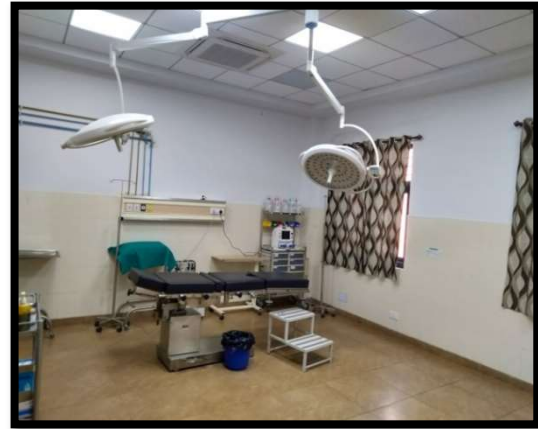


## Medical

1. The medical examination of new appointee and employees are being conducted at MCF/RBL Hospital.
2. MCF/RBL hospital is fully equipped with Wi-Fi and CCTV cameras.
3. Electrolyte Analyzer has been installed at MCF/RBL Hospital for blood test of MCF employee and their family members. High quality HbA1C will be provided soon.
4. Women Cancer screening camp was organised on 19.09.2018 at Workers Club, MCF/RBL.
5. Physiotherapist has been appointed at MCF/RBL hospital and Sport Medicine Centre will be started soon on procurement of equipments.
6. Charak Diagnostics Centre, Lucknow and Nidan Diagnostics Centre, Lucknow has empanelled to provide Ultra Sound, CT Scan and MRI facility for MCF beneficiaries.
7. Total patients in 2018-19 was 45084, in which 764 patients treated in IPD and 44320 patients treated in OPD.
8. Total 1679 patients were referred during the year, out of these 1437 patients referred to empanelled hospital and 242 patients referred to Govt. Hospital.
9. IPD department has been started including Male ward, Female Ward and Paediatric Ward.
10. HMIS has been implemented in MCF/RBL hospital as a step in the direction of paperless hospital.
11. Automated Haematology Analyzer machine has been installed.
12. School Health Camp was organized on 13.09.2018 at Gyanda Bal Mandir.
13. Health Check-up Camp organized at Kendriya Vidyalay MCF/RBL for medical examination of all school children.



**MCF Hospital Building**



**OT Room**

### Radiology lab:



**Machines in Pathology lab:**



Automated Chemistry Analyser Machine



Automated Haematology Machine

**Electrolyte Analyzer machine**



**Advance Life Support Ambulance:**



**Basic Life Support Ambulance:**



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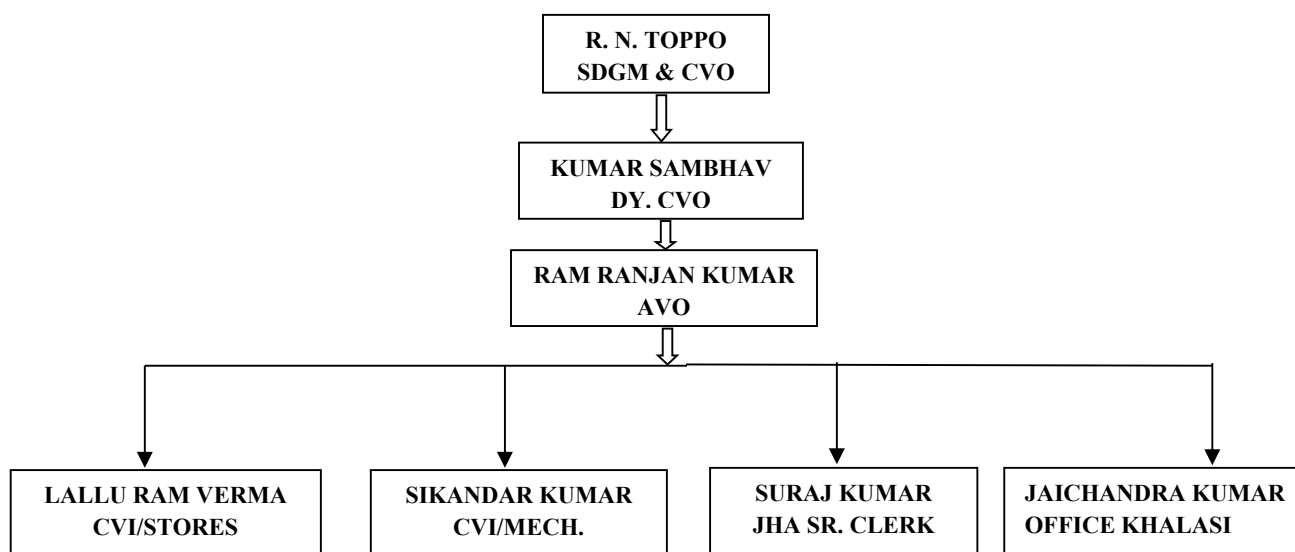
## Vigilance Department

### Annual Report 2018-19

#### ➤ History of Vigilance Department in MCF/RBL:

- Modern Coach Factory, Raebareli is under setting up stage and we are now taking over functions independently. There are nine departments in this organisation, i.e.: (i) Mechanical (ii) Electrical (iii) Stores (iv) Accounts (v) Personnel (vi) Civil (vii) Medical (viii) IT and S&T (ix) General Administration.
- At present against the 172 sanctioned posts in Gazetted cadre, 140 posts are in Operation along with 2198 number of non-gazetted posts.

Organisation chart of Vigilance Department is as follows:



#### ➤ Summary of Cases:-

- In year 2018-19, 13 Railway Board referred complaints & 19 other (Direct/Other Railway referred) complaints have been received.

#### ➤ Achievement:-

- (i) During year 2018-19, out of 32 vigilance complaints, 15 complaints have been closed (10 Closed as pseudonymous & 05 closed as no vigilance angle noticed) and 17 complaints are under investigation.

(ii) The Vigilance Awareness week, 2018 was observed at Modern Coach Factory, Raebareli from 29.10.2018 to 03.11.2018 as per directives issued by Railway Board. The main theme of this year's Vigilance Awareness Week was "Eradicate Corruption- Build a New India". Various activities conducted during this week like Vigilance pledge in administrative building & workshops premises, pamphlets, posters and hoarding exhibiting anti-corruption themes were distributed and displayed at prominent places in admin building, workshop and township premises. A customer/vendor grievance redressal camp was organised. Vigilance pledge, essay writing and poster competition on the topic "Eradicate Corruption- Build a New India" was organized at Ganesh Inter College, Aihar & Kendriya Vidyalaya. 3rd Issue of vigilance bulletin has been released by the General Manager/MCF.



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## Electrical Department

### Annual Report 2018-19

**(A) Power supply system of MCF/RBL consists of the following:**

- |      |   |   |
|------|---|---|
| i)   | 132/11 KV MRS (Main Receiving sub Station)- | 02X12.5 MVA   |
| ii)  | 33/11 KV Sub Station (ASS)-                 | 01X10 MVA   |
| iii) | Auxiliary Sub Station (ASS)-                | 03/4X750 KVA- (10nos.)                                |
| iv)  | Compact Sub Station (CSS)-                  | 01X750 KVA- (10 nos.)                                 |
| v)   | Compact Sub Station (CSS)-                  | 01X250 KVA- (03 nos.)<br>(For 3 MW solar plant)       |
| vi)  | Solar Power Plant-                          | 03 MW (1MW solar plant<br>commissioned on 11.11.2017) |
| vii) | DG sets-                                    |   |
| a)   | 04X1010 KVA installed at 132/11 KV MRS      |   |
| b)   | 01X380 KVA DG set at MCF hospital.          |   |
| c)   | 01X125 KVA DG set at Lucknow rest house     |   |
| d)   | 01X10 KCA DG set at MRS (spare)             |   |

**(B) Sanctioned Load-**

- 4000 KVA ON 132/11 KV
- 100 KVA ON 33/11 KV

**(C) Average unit consumption per month in year 2018-19- 1481806.75 KWH**

**(D) Power generation by solar plant during 2018-19- 40.97 Lakh units**

**(E) Miscellaneous Electrical Assets:**

- Total no. of solar street lights with 75 Ah Byt (15 W LED)-380 nos.
- Total no. of street lights (45/60 W LED)- 2169 nos.
- Total no. of high masts (each with 2.28 KW LED)-67 nos.
- Total no. of induction lamp (200 W)- 2116 nos. ( in factory area)
- Total no. of light pipes-1400 nos. (in factory area)

**Achievement**

- Replacement of all non LED lights by LED light in workshop and colony.
- Provision of star rated AC/fan/motor.
- Reduction in per coach energy/consumption from 16001 KWH per coach in 2017-18 to 8952.99 KWH per coach in 2018-19.
- Saving in electrical power due to 3 MW solar in 2018-19 (generation -40.97 lac units, cost 3.07 (Cr)

## Security

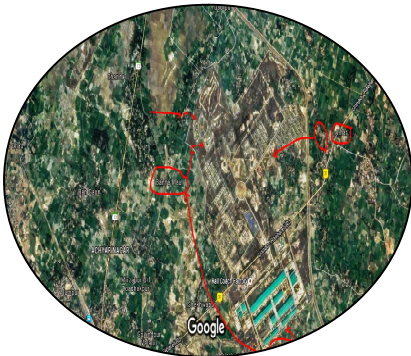


# RAILWAY PROTECTION FORCE MODERN COACH FACTORY, RAEBARELI Annual Report -- 2018-19



Railway Protection Force has assumed the duties of Protecting the Railway Property of the Modern Coach Factory, Raebareli since 15<sup>th</sup> February, 2011. Railway Protection Force (RPF) is an Armed Force of the Union. The Responsibility of this Unit is to protect the Railway Assets of the Modern Coach Factory, Raebareli. For this purpose, Strength of 61 members of the Force has been sanctioned.

At MCF, RPF has a set up of Executive Branch and Crime & Special Intelligence Units. A 24X7 Security Control Room has also been operationalised. All these Units work under the control and command of Senior Security Commissioner/RPF. The Administrative Control of this Security Department lies with Inspector General-cum-CSC/RPF/Northern Railway, Baroda House, New Delhi and General Supervision is under the Principal Chief Mechanical Engineer, MCF.



## JURISDICTION

This Factory is being set up in 540 hectare land, which includes construction of a modern, Eco-Friendly Township with need based Social Infrastructure for providing Residential Accommodation to its Employees.

The Modern Coach Factory, Lalganj, Rae Bareli, is situated at 05 Km east of Lalganj Railway Station on Lalganj-Raebareli Road. The Factory Area is spread across 1.67 Sq.Km, and Township Area is spread across 353 Ha land.

The Township is encircled by a 10.57 Km Long Perimeter Boundary Wall and the length of the Perimeter boundary wall of the Workshop is 5.4 Kms. The MCF area falls under the jurisdiction of Police Station, Lalganj. The Police Station, Lalganj comes under Lucknow range which is headed by an IG, Uttar Pradesh Police.



## PRIVATE SECURITY

The Railway Protection Force is being assisted by Uttar Pradesh Purva Sainik Kalyan Nigam Limited (A UP Government Undertaking), who had been awarded a Contract for a Period of 39 months from the date of actual commencement of the work (from 10.07.2016 to 09.10.2019) for Guarding the Railway Property in the identified Non-Core Areas, having a strength of 108 Security Guards.

## POSTING & TRAINING

The General tenure of Non-Gazetted RPF Personnel at MCF is for 3-5 years. The Periodical Transfer of RPF staff is carried out by the IG-cum-CSC/RPF/NR. The Members of the Force are regularly trained to update their Soft & Hard Skills.

The Present Strength for the year 2018-19 of the RPF Personnel is as under:

Description	Sr.SC	SC	IPF	SI	ASI	HC	Const	Total
Sanction Strength	01	01	02	08	09	11	31	61
Present Strength	01	01	01	04	04	--	28	37
Vacancy	-	-	01	04	05	11	3	24

The Training details of the RPF Personnel are as under:

S. No.	Name	Rank	Course Name	From	To
1.	Govinda Ram	CT	Re-Orientation Training	25.03.18	27.05.18
2.	Karambir	CT		21.04.18	24.06.18
3.	Naveen	CT		01.07.18	02.09.18
4.	Jagbir Singh	CT		12.08.18	15.10.18
5.	Nitin Kumar	CT		12.08.18	15.10.18
6.	Jaibir Singh	CT		09.09.18	21.10.18

### Courses

S.No.	Name Sh.	Rank	Course	From	To
1.	R.B. Singh	ASI	RSMS Course	12.03.18	16.03.18
2.	Ajay Kumar Singh	CT		14.05.18	18.05.18
3.	Ashok Kumar	CT		09.10.18	12.10.18
4.	Pushpendra Kumar	CT	CTI Course	11.02.19	20.04.19



### ACCOMODATION

➤ Accommodation is provided to the RPF Staff in the Railway Quarters, the details of which is as under:

S.No.	Types of quarter	No of quarters	
		Available	Further requirement
01	Type-II	10	05
02	Type-III	03	03
03	Type-IV (DS)	02	
04	Type-IV (SS)	00	
05	Type-V	01	

### DOG SQUAD

The Dog Kennel for 01 Tracker & 01 Sniffer Dog has been proposed for which a Dog Kennel is under construction. The matter is under active consideration by the Competent Authority.

### RPF Barrack Complex



02 Nos new RPF barracks at the MCF Township have been constructed and operations started on 26<sup>th</sup> June, 2018. The description is as follows:

Sr. No.	Description	Capacity
1.	Shaurya Sadan (For Staff)	32 Beds
2.	Shakti Sadan (For women staff)	10 Beds

The both Barracks have been provided with all the essential amenities hygiene and healthy living as per rooms.



## CRIME CONTROL

During the year 2018-2019, the RPF was able to successfully implement the Zero Tolerance Policy as the result of which, 03 cases of theft of Railway Property was registered. This result was achieved due to 24 X 7 hours Patrolling, Strict Access Control at all the Entry/Exit Gates and round the clock Surveillance of the Identified Vulnerable Points.



## ARMS & AMMUNITIONS:

This RPF unit is equipped with latest Weapons. The details of which are as under:

S. N.	Arms	Quantity	Sling	Ammunitions	Spare Magazine	Bayonet	Nozzal Cap
1.	Rifle 7.62 mm{SLR} IAI	04 Nos.	--	380 Nos.	16 Nos.	--	--
2.	ARM 7.62x39mm ARM	03 Nos.	--	280 Nos.	12 Nos.	--	--
3.	Rifle 5.56mm{INSAS} fold Butt 2A	08 Nos.	08 Nos.	580 Nos.	40 Nos.	04 Nos.	08 Nos.
4.	Pistol Auto 9mm with Magazine	22 Nos.	--	1310 Nos.	44 Nos.	--	--
5.	Carbine Machine Gun 9mm IA. IAI	08 Nos.	--		24 Nos.	--	--
<b>Total =</b>		<b>45 Nos.</b>	<b>08 Nos.</b>	<b>2550 Nos.</b>	<b>136 Nos.</b>	<b>04 Nos.</b>	<b>08 Nos.</b>

## MODERNISATION

- MCF/RBL/NR has become the 1<sup>st</sup> Production Unit over Indian Railways to start Aerial Surveillance with State of the Art Day/Night Ultra Advanced Cameras with Intelligent Video Analytics having features like Motion Detection Analytics through Pixel Change Detection, full Body Profiling for Facial Recognition, Crowd Density Estimations, Target Locking/Tracking, Fired Detection through Image Distortion Analysis, Suspicious Behaviour Identification etc
- To strengthen the working of the Force, the Force has been provided with latest Security Gadgets modern Bullet Proof Jackets & Helmets, Polycarbonate Shield and Canes, Dragon Search Lights, High resolution CCTV Based Surveillance System, HHMD, DFMD, Drone Camera etc. the details of the Security Items are as under:

Name of the Security Item	Quantity
Bullet Proof Jacket	06 Nos.
Bullet Proof Helmet	10 Nos.
Polycarbonate Shield	20 Nos.
Body Protector	20 Nos.
Polycarbonate Lathi	20 Nos.
Sony Camcoder	01 No
Sony Dsc Camera	01 No
Dragon Search Light	05 Nos.
HHMD	15 Nos
DFMD	02 Nos.
Drone Camera	01 Nos.



## ACCESS CONTROL

It is proposed to realize an IP based integrated security system for Intruder Detection, Alarm Generation and Protection. The system shall have the following features:

- Totally an IP based network, digitally controlled and remote monitoring system.
- Graphical Mimic Panel at Control Room
- IP based Access Control System for MCF/RBL is being designed and finalized.
- This System will be integrated with the electrically controlled Boom Barriers & RFID Based identification System at the Entry/Exit Gates.

## E FUTURE ROADMAP

- Developing a State of the Art Integrated Security Architecture Comprising of Intrusion Detection System and RFID based Access Control
- Achieving Higher standard of efficient Practices as specified by the ISO

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## Sports Association

### Annual Report 2018-19

#### **1.0 Cricket**

Sh.Vikash Chaoudhary, Ch. OS Stores department was nominated as fitness trainer for Indian Railway U23/Men Cricket team for Coaching Camp from 24/07/2018 to 07/08/2018 and from 29/08/2018 to 11/09/2018 at RCF Kapurthala and fitness trainer for Indian Railway Men Handball team for of season coaching camp to be held at Kannail Singh Stadium, New Delhi from 16/06/2018 to 25/07/2018.

MCF team has participated in 64<sup>th</sup> All India Railway (Men) Cricket Championship 2018-19 conducted by (RCF) Kapurthala from 23/03/2019 to 05/04/2019.

MCFSFA organised 7 a side Interdepartmental Indoor Cricket Tournament (GM Cup) 2018-19 from 05/02/2018 to 12/02/2018.

#### **2.0 Road cycling**

MCF team participated in 56<sup>th</sup> All India Railway Road Cycling Championship conducted by (NWR) Bikaner from 03/10/2018 to 05/10/2018.

Shri Ramesh N. Jr. Clerk represented Tamilnadu state cycling team in 23<sup>rd</sup> Senior National Road Cycling Championship 2018 will be held in Kurukshetra, Haryana from 18/11/2018 to 26/11/2018.

#### **3.0 Track Cycling**

MCF team has participated in 56<sup>th</sup> All India Railway Track Cycling Championship conducted by (SCR) Secunderabad from 08.01.2019 to 10.01.2019. Shri Ramesh N. has secured Silver Medal in 100 mtr. Sprint event.

Shri Ramesh N. has been selected as a playing member (200mtr sprint) of Indian Railway Track Cycling team and has participated in 71<sup>st</sup> Senior National Track (M&W) Cycling Championship held at Jaipur from 30/01/2019 to 03/02/2019.

#### **4.0 Football**

Inter department tournament was conducted at MCF Football Stadium and won by Admn. Block in the month of April 2018.

#### **5.0 Summer Coaching Camp 2018**

MCFSFA has organised summer coaching camp at MCF during the summer vacations in following games and around 250 children between age group 04 to 18 years were participated in to the event.

1. Football
2. Table Tennis
3. Badminton
4. Aerobics
5. Taekwondo
6. Golf

#### **6.0 International Yoga day.**

4<sup>th</sup> International day of Yoga was organised by MCFSFA on 21/06/2018. Around 500 persons participated in this event.

#### **7.0 Aquatic Team**

MCF team has participated in 59<sup>th</sup> All India Railway Aquatic Championship conducted by (SWR) Hubli From 01/09/2018 to 05/09/2018.

#### **8.0 Athletics Team**

MCF team has participated in 84<sup>th</sup> All India Railway Athletics Championship conducted by (NER) Lucknow from 17/08/2018 to 19/08/2018.

Shri Munna Singh Ch.OS participated as Technical Official for 84<sup>th</sup> AIR Athletic Championship conducted by N.E. Rly. from 17/08/2018 to 19/08/2018.

#### **9.0 Table Tennis**

Table Tennis Inter department tournament was conducted at Gomti Indoor Stadium from 13/07/2018 to 14/07/2018.

MCF team so selected participated in 66<sup>th</sup> All India Railway Table Tennis Championship conducted by (MCF) Raebaeli From 21/07/2018 to 25/07/2018.

### **10. Mid Session Golf**

MCF team has participated in All India Railway Mid Session Golf Championship conducted by (RCF) Kapurthala From 30/11/2018 to 02/12/2018.

### **11. MCFSA organised All India Railway Table Tennis Championship 2018-19.**

66<sup>th</sup> All India Railway Table Tennis Championship 2018-19 was organised in befitting manners from 21/07/2018 to 25/07/2018 by MCF Sports Association at Gomti Indoor Stadium, Lalganj Raebareli and more than 10 teams and around 130 players & officials from different Railways were participated in this event.

### **12. MCFSA organised All India Railway Boxing Championship 2018-19.**

73<sup>rd</sup> Men & 12<sup>th</sup> Women All India Railway Boxing Championship 2018-19 was organised in befitting manners from 20/09/2018 to 23/09/2018 by MCF Sports Association at Gomti Indoor Stadium, Lalganj Raebareli and more than 20 teams and around 250 players & officials from different Railways were participated in this event.

### **13. MCFSA organised All India Railway Cross Country Championship 2018-19.**

50<sup>th</sup> All India Railway Cross Country Championship 2018-19 was organised in befitting manners from 05/12/2018 by MCF Sports Association at Shopping Complex Prashanti Parishar, Lalganj Raebareli and more than 16 teams and around 150 players & officials from different Railways were participated in this event.

### **14. Sports Facilities at MCF**

Indoor & outdoor sports stadium have playing facilities at Modern Coach Factory sports i.e. Badminton, Basketball, Squash, Table Tennis, Yoga, Taekwondo cum marshal art, Multigym. Hockey, Football, Cricket, Volleyball, Lawn Tennis, Golf, Weightlifting, Powerlifting, Boxing, Gymnastic, Billiards, Other sports facilities may be added subsequently.

### **15. Badminton**

MCF Badminton team first time participated in All India Railway Men & Women Badminton Championship 2018-19 from 06/08/2018 to 10/08/2018 organising by N. Rly. New Delhi. Inter department tournament was conducted at MCF Indoor Stadium from 23/03/2018 to 26/03/2018.

### **16. Run for Unity**

First time MCFSA organised "Run For Unity" on dt. 31/10/2018 at Shopping Complex Prashanti Parishar and around 500 employees & officers were participated in this event.

### **17. Cycle Run**

First time MCFSA organised Cycle Run (08 km.) on 15/04/2018 starting from Shopping Complex Prashanti Parishar. Around 150 employees & children participated in this event.

### **18. Volleyball**

First time MCFSA organised Volleyball Inter departmental tournament at Gomti Indoor stadium from 16/01/2019 to 18/01/2019.

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# MODERN COACH FACTORY

Website : [www.mcf.indianrailways.gov.in](http://www.mcf.indianrailways.gov.in)