

अशोक कु. अग्रवाल
महाप्रबंधक
ASHOK K. AGARWAL
GENERAL MANAGER



भारत सरकार, रेल मंत्रालय
सवारी डिब्बा कारखाना
चेन्नै - 600 038
Govt. of India, Min. of Railways
Integral Coach Factory
Chennai - 600 038

महा प्रबंधक का कार्यालय/General Manager's Office
चेन्नै/Chennai - 600038.

स. ए/डी/स्टाट/२२
No. A/D/Stat/22


दिनांक/Dated: 20/01/2015



सचिव/Secretary
रेल्वे बोर्ड/Railway Board
नई दिल्ली/New Delhi - 110001.

मैं ३१ मार्च २०१४ को समाप्त वित्तीय वर्ष की सवारी डिब्बा कारखाने की वार्षिक विवरणात्मक रपट इसके सात भेज रहा हूँ।

I forward herewith the Annual Narrative Report of the Integral Coach Factory for the fiscal year ended on 31st March 2014.


अशोक कु. अग्रवाल
ASHOK K. AGARWAL
महा प्रबंधक/General Manager

CONTENTS

CHAPTER	SUBJECT	PAGE
I	General	1
II	Production	30
III	Production Planning and Control	39
IV	Quality System	49
V	Design & Development	60
VI	Export	70
VII	Projects	77
VIII	Stores	81
IX	Accounts & Finance	89
X	Electrical Production & Maintenance	102
XI	Civil Engineering	130
XII	Personnel Branch	137
XIII	Medical Department	161
XIV	Security Branch	164
XV	Right to Information	169
ANNEXURES		
A	Provisional Cost and Furnishing Cost	
B	Manufacturing Account	
C	Balance Sheet	
D	Gazetted Organisation Chart	
E	Milestones and Achivements	
F	Shell Production Since 1995	
G	Outturn of Coaches Since 1957	
H	Statement of Stores Transactions	

GENERAL

Production Highlights

ICF sustained its record-breaking performance during the year 2013-2014 and produced 1622 coaches, surpassing the previous best outturn of 1620 coaches achieved during 2012-13. With this, ICF has bettered the previous year's production for the 11th time in a row.

The special builds manufactured in 2013-14 include stainless steel AC EMU rakes for MUTP phase-II, SPART rakes and LHB EOG coaches.

The type-wise details of production of shells and coaches during 2013-14 are furnished hereunder:

Sl. No.	BUILD	SHELLS		Coach	
		Outturn	Total	Outturn	Total
	Motor Coaches				
1	AC EMU B	3	71		49
2	AC EMU B MUTP	8		4	
3	ACDC EMU B MRVC	3		3	
4	DEMU DPC HHP	27		20	
5	SPART DPC1	15		11	
6	SPART DPC2	15		11	
	Trailers				
1	AC EMU C MUTP	5	138	4	115
2	AC EMU D MUTP	2		2	
3	AC EMU DHC MUTP	4		2	
4	ACDC EMU C MRVC	3		3	
5	ACDC EMU D MRVC	2		2	
6	ACDC EMU D HC MRVC	1		1	
7	DEMU HHP TC GEN	58		48	
8	DEMU HHP TC VEN	30		24	
9	DEMU HHP TC GEN HALDIA	12		12	
10	DEMU HHP TC VEN HALDIA	6		6	
11	SPART TC	15		11	
	LHB Coaches				
1	LWACCW	7	26	10	25
2	LS	4			
3	LWSCN	15		15	
	Air-Conditioned Coaches				
1	SG FACCW	16	270	16	248
2	SG ACCW	130		122	
3	SG ACCN	87		81	
4	SG FAC	10		6	
5	SG SCZAC	20		14	
6	SG SCZAC JS	5		5	
7	SG FACCW CBC	2		4	
	Conventional Coaches				
1	SG GSCN	621	1139	614	1185
2	SG GSCZ	85		85	
3	SG GS	260		304	
4	SG SLR / SG SLR D	133		140	
5	SG CB	15		15	
6	SG GSCZ JS	25		25	
7	SR JS			2	
	GRAND TOTAL		1644		1622

VISITS & FUNTIONS

FLAGGING OFF OF 1600 DEMU & HS-SPART

Shri Keshav Chandra, Member Mechanical, Rly. Board, Shri A. K. Vohra and Shri V. Ramachandran, Dir.General RDSO/Lucknow visited ICF and flagged off the first 1600 HP DEMU with 3-phase Alternate Current (AC) transmission and the HS SPART on 01.04.2013 in the presence of Shri Abhay K. Khanna, General Manager/ICF and other senior officials of ICF.



HIGHEST EVER PRODUCTION

ICF achieved the highest ever production of 1620 coaches surpassing the target of 1601 set by the Rly. Board in the financial year (2012-13) ended on 31.03.2013. To mark the occasion and upkeep the spirit of work force, General Manger/ICF distributed sweets to all the employees and staff on 02.04.2013.



RAJBHASHA LIBRARY INAUGURATION :

A Rajbhasa Library was inaugurated at Furnishing Shop Floor/ ICF by CWE/Fur. on 13.04.2013. The Library will help to enrich Hindi Knowledge of ICF employees and will help implement Official language.



Dr.B.R.AMBEDKAR's BIRTHDAY CELEBRATIONS

To mark the 122nd Birthday celebrations of Bharat Ratna Dr.B.R.Ambedkar, General Manager, ICF garlanded the bust of Bharat Ratna Dr.B.R.Ambedkar on 15-04-2013 at the Shell Administrative building lobby. In this connection a Blood donation camp was organised at the TTC Auditorium.



58th RAILWAY WEEK CELEBRATION:

The 58th Railway Week Celebrations were held at ICF Stadium on 15.04.2013. Shri Abhay K. Khanna, General Manager, ICF, was the Chief Guest on this occasion. He released a booklet containing the names of the award winners and also distributed the Shields, Trophies and Cups to the Supervisors of the most efficient sections, offices and production shops, medals, merit certificates and cash awards to the officers and staff of ICF who had put in meritorious service during the year (2012-13). In this connection a Handicraft Exhibition was also organized.



BUYER AND SELLER MEET:

A Buyer and Seller meet was organized jointly by ICF & NSIC (National Small Industries Corporation) on 25th and 26th of April 2013 at Integral Club, ICF.



ELECTRICAL SAFETY WEEK:

A lecture was organized by the Electrical Department ICF on Electrical Safety in connection with the Electrical Safety Week from 02.05.2013 to 08.05.2013 at D&D Auditorium.



FOOTBALL TOURNAMENT:

ICF Sports Association organized the Final Inter Departmental Football Tournament on 10th May 2013 at the ICF sports complex. General Manager, ICF, was the Chief Guest on this occasion and distributed the Trophies to the winners of the tournament.



ANTI TERRORISM DAY:

Anti Terrorism day was observed at ICF on 21.05.2013. To mark this occasion a pledge was administered by the General Manager/ICF at the Shell Administrative Building lawn. All the Officers and staff took the pledge.



RAILWAY BOARD OFFICIALS VISITED ICF:

Railway Board officials visited ICF on 04.05.2013 & 21.05.2013. They held discussion with GM/ICF and PHOD's of ICF.



SPRING MEETING :

Annual Spring Indent Meeting was held at D&D Auditorium/ICF on 22.05.2013. General Manager, ICF, Senior Officers from Railway Board and Officers from Zonal Railways participated in the meeting.



DIABETES PREVENTION PROGRAMME

Inaugural Function of Diabetes Screening Camp and Prevention Programme for ICF employees was conducted at AWTI/ICF on 27.05.2013. GM/ICF was the Chief Guest on this occasion. This program was organized by ICF Hospital in collaboration with India diabetes Research Foundation & Dr.A.Ramachandran's Diabetes Hospital.



WORLD ENVIRONMENT DAY:-

The World Environment Day was celebrated at ICF on 05.06.2013. In this regard a pledge was administered by General Manager/ICF at Shell Administrative Office Lawn. All officers and staff of ICF took the pledge.



OLIC MEETING :

The 111th Official Language Implementation Committee meeting was organized by Rajbhasha Vibhag was held on 05.06.2013. General Manager/ICF, HOD's and members of OLIC were present in the meeting. On this occasion a Hindi periodical journal named "Rail Ranjani" was also released.



FLAGGING OFF OF MRVC PHASE-II

The first prototype MUTP Phase –II rake was flagged off by Shri Rakesh Misra, GM/ICF and Shri Rakesh Saksena, CMD/MRVC on 1st October at ICF. This event was widely covered by print and electronic media and the unique features of 3-phase AC EMU such as energy efficiency and eco friendly features received wide publicity.



WORLD BANK OFFICIALS VISITED ICF

A team of Officials from the World Bank visited ICF on 07.10.2013, and held discussions with the Senior Officials of ICF. They also visited the factory to see the process of manufacturing MUTP-II EMU rakes.



VIGILANCE AWARENESS WEEK

The Vigilance Awareness Week was observed at ICF from 28.10.2013 to 02.11.2013. As part of the Vigilance Awareness Week a pledge was administered by CME/ICF at the Shell Administrative building lawns. All the officers and employees took the pledge.



NEW GENERAL MANAGER FOR ICF

Shri Ashok K. Agarwal, assumed charge as General Manager, ICF on 20.11.13(Wednesday).



S.RLY.GENERAL MANAGER VISITS ICF

Shri Rakesh Misra, GM, S.Rly. visited ICF on 25.11.2013. He met Shri Ashok K.Agarwal, General Manager, ICF and held discussions.



GENERAL MANAGER ICF CALLED ON CHIEF JUSTICE

Shri Ashok K. Agarwal on assuming charge as General Manager, ICF called on Hon'ble Thiru Justice Rajesh K. Agrawal, Chief Justice, Madras High Court on 28.11.2013 (Thursday) as a courtesy call.



GENERAL MANAGER VISITS SHELL & FURNISHING SHOPS

GM/ICF visited Shell and Furnishing divisions on 23rd and 26th of November 2013 and assessed various manufacturing aspects of the factory.



QWAMI EKTA WEEK OBSERVED AT ICF

Qwami Ekta Week (National Integration week) was observed at ICF from 19.11.2013 to 25.11.2013. On this occasion a pledge was administered by CME/ICF to all Officers and Staff at the Shell Administrative Building Lawns.



RAJBHASHA UTSAV

The Valedictory Function of Rajbhasha Utsav was celebrated on 27.11.2013 at D&D Auditorium ICF. On this occasion a cultural programs was organized and prizes were distributed to the winners of various competitions.



ENERGY CONSERVATION WEEK OBSERVED IN ICF

The Energy Conservation Week was observed in ICF from 14.12.2013 to 20.12.2013. In this connection a seminar was organized and various steps & measures to be taken to save energy were discussed.



ICF RECEIVES THE 'NATIONAL ENERGY CONSERVATION AWARD'

ICF has been awarded the first prize in the prestigious 'National Energy Conservation Award' for the year 2013. The award was given by the President of India, Shri Pranab Mukherjee and received by Shri Ashok K. Agarwal, General Manager, ICF at the National Energy Conservation Award function held on 16.12.2013 at the Vigyan Bhawan, New Delhi.



PENSION ADALAT CONDUCTED IN ICF

A Pension Adalat was conducted by the Labour Welfare Section of Personnel Department at the TTC Auditorium, ICF on 16.12.2013.



OLIC MEETING HELD IN ICF

The Official Language Implementation Committee Meeting was held on 18.12.2013 in ICF. General Manager/ICF, HOD's and Members of OLIC participated in the meeting.



ANNUAL DAY CELEBRATIONS OF KARUNA SCHOOL

“KARUNA” school celebrated its Annual Day on 23.12.2013 at the AWTI Auditorium. General Manager/ICF was the Chief Guest on this occasion and distributed prizes to the Karuna School Children's.



MEMBER, MECHANICAL/RAILWAY BOARD VISITS ICF

Shri Alok Johri, Member, Mechanical, Railway Board, visited ICF on 10.01.2014. He held discussions with General Manager and other Senior officials of ICF. He also, visited the Shell and Furnishing Divisions of the factory and flagged off a new air conditioned LHB EOG (End On Generation) coach from the Furnishing Division of ICF.



PULSE POLIO IMUNIZATION

Pulse Polio Immunization Programme was organized at ICF Hospital on 19.01.14. On the occasion children's were administered polio drops.



CUSTOMER INTERACTION MEETING

A Customer Interaction meeting was organized on 22nd and 23rd Jan.2014 at ICF. Chief Mechanical Engineer, ICF presided over meeting. Officers from ICF and various Zonal Railways participated in the meeting



65TH REPUBLIC DAY CELEBRATIONS

The 65th Republic Day was celebrated at ICF Stadium on 26.01.2014. Shri. Ashok K. Agarwal, General Manager/ICF unfurled the National Flag and accepted the guard of honour given by ICF Railway Protection Force contingents, NCC cadets, Scouts & Guides, the apprentices of ICF Technical Training Center and children of ICF schools.



MARTYR'S DAY

Martyr's Day was observed at ICF on 30.01.2014. To mark this occasion two minutes silence was observed by all Officers and Staff in memory of the leaders who sacrificed their lives for freedom of the Nation.

59TH ALL INDIA RAILWAY CRICKET CHAMPIONSHIP

59th All India Railway Cricket (Men) Championship 2013-14 was held at ICF stadium from 24.01.2014 to 04.02.2014. Shri Ashok K. Agarwal, General Manager, ICF was the Chief Guest on the occasion and distributed the prize and trophies to the winners.



SCOUTS AND GUIDES RALLY HELD AT ICF

The Southern Railway State Bharat Scouts & Guides ICF District organized the ICF District Rally and Standard Judging Competitions at the ICF District Headquarters on 15.02.2014 & 16.02.2014. CME, ICF was the Chief Guest on the occasion.



PULSE POLIO IMUNIZATION

Pulse Polio Immunization Programme was organized at ICF Hospital on 23.02.2014. On the occasion children's were administered polio drops.



VENDOR DEVELOPMENT PROGRAM HELD AT ICF

A State Level Vendor Development Programme jointly organized by ICF and Micro, Small & Medium Enterprises (MSME) Development Institute was held at AWTI Auditorium, ICF on 28.02.2014. Shri Ashok K. Agarwal, General Manager/ICF inaugurated the programme and also declared open an exhibition organized on the occasion.



NATIONAL SAFETY DAY

National Safety Day was observed at Bogie Manufacturing Shop, ICF on 05.03.2014. In this connection various safety programs were conducted and Safety Awards were given to the employees.



WOMEN'S DAY CELEBRATIONS

International Women's Day was celebrated at ICF on 07.03.2014. Smt. Sudha Agarwal, President/ICFWO was the Chief Guest on this occasion and distributed prizes to the winners of various competitions.



OLIC MEETING

The 114th Official Language Implementation Committee meeting organized by Rajbhasha Vibhag was held on 13.03.2014. General Manager, ICF, PHOD's, HOD's and members of OLIC were present in the meeting.



VISIT OF MEMBER ELECTRICAL RAILWAY BOARD

Shri Kul Bhushan, Member Electrical, Railway Board visited ICF on 28.03.2014. He held discussions with General Manager, PHOD's, HOD's and other Higher Officials of ICF. He also visited the Shell and Furnishing divisions of the factory and inaugurated the Main Receiving Sub-Station(MRS) at LHB Shop.



HINDI WORKSHOP

The Rajbhasha Vibhag of ICF organized a Hindi Workshop from 18.03.2014 to 20.03.2014 at Hindi Class Room. In the Hindi Workshop the employees were trained to do noting and drafting work in Hindi.

VISIT OF ADDITIONAL MEMBER(ME)

Shri Rakesh Vatash, Additional Member (ME), Railway Board visited ICF on 28.03.2014. He met General Manager, ICF and held discussions with CME/ICF and other Senior Officials of ICF.



VISIT OF CHAIRMAN RAILWAY BOARD

Shri Arunendra Kumar, Chairman Railway Board visited ICF on 31.03.2014. He held discussions with General Manager, PHOD's, HOD's and other Higher Officials of ICF. He visited the Shell and Furnishing divisions of the factory. He also flagged off a DMU Rake in the Furnishing Division, inaugurated the 5-Axis Machine at LHB Shop and Robotic Welding Machine in the Shell Division. Later he addressed the JA and Selection Grade Officer of ICF and S.Rly. at AWTI auditorium.



Function of Law Branch

The Law Branch in ICF is functioning under the direct control of G.M, however the Administrative control rests with C.P.O.

The function of the Law Branch is to conduct litigations on behalf of the Administration in addition to tendering legal opinion in all matters pertaining to various Branches of the Administration. The court cases handled by Law Branch pertain to Service Matters, Suits/Appeals filed by or against the Administration in respect of various contracts of Stores Department, Engineering, Works Contracts, Electrical Department cases, Risk Purchase cases, Sales Tax cases of Stores Department, Excise Duty cases of Mechanical Department and Personnel department cases which are being filed before various courts such as Central Administrative Tribunals, Industrial Tribunals, Labour Courts, Consumer Redressal Forum, Debts Recovery Tribunal, Regional Labour Commissioner, WCA cases, Family Courts, Central Excise & Sales Tax Appellate Tribunal, Metropolitan Magistrate Court, High Courts and Supreme Court. Number of Court Cases dealt during the year 2013-14 is as follows :

	S.C	H.C.	CAT	CCC	Labour Court	Family Court	Other Courts	Total
Opening Balance	4	56	44	32	3	15	10	164
Registration	1	17	38	6	2	2	5	71
Disposal	1	9	25	19	3	3	1	61
Closing	4	64	57	19	2	14	14	174

The Law Branch is also vetting documents such as Annual Maintenance Contract, Tender Schedule, Guarantee Bonds, Indemnity Bonds, Power of Attorney, Partnership Deeds, Memorandum & Articles of Association, Title Deeds in respect of House Building Advances of staff etc. Tendering of Legal Opinion and Vetting of documents during the year 2013-14 are as follows :

	Opinion	Vetting	Total
Registration	157	1099	1256
Disposal	157	1099	1256

This Branch is headed by a Sr. Law Officer, assisted by a Chief Law Assistant and a Chief Office Superintendent. Sr. Law Officer is also associated in the discussions with the other Government Authorities such as, Regional Labour Commissioner, Labour Enforcement Officer, etc. for solving disputes relating to the rights and liability of the ICF Administration.

Our success rate during the year is about **83.6 %** since 51 cases of High Court, CAT and various other courts have been decided in favour of Rly. Administration out of 61 cases totally disposed off.

During the year, Law Branch has won a Land Grabbing case and thereby saved a property worth about Rs. 35 Crores by promptly filing the documents, taking proper defence and effectively assisting the Railway Advocate (WP No. 4834 of 2013). In an Eviction case, Law Branch was able to collect the unpaid dues of Rs. 4 Lakhs by obtaining orders from the High Court of Madras (CRP No. 2651 of 2013).

VIGILANCE ORGANIZATION

The Vigilance Organization is under the control of Chief Vigilance Officer who is discharging his duties on a part-time basis in addition to his regular duties as Chief Mechanical Engineer/QA. He is assisted by a full time Senior Vigilance Officer, two Vigilance Inspectors, a stenographer, an Office Superintendent and two Vigilance Watchers.

The Vigilance Organization has been effectively discharging the dual functions of Prevention and Investigation. Emphasis is made on the preventive aspects especially in areas where corruption is likely to prevail or flourish. Apart from preventive checks, investigations of complaints are also conducted and action taken based on the outcome of the investigation. Vigilance has been making sustained efforts to promote integrity among employees and eliminate corruption.

PERFORMANCE

During 2013-14, 74 preventive checks were conducted with a view to highlighting the irregularities and to set right the lacunae in the existing system / procedure. In view of lapses noticed, disciplinary action was initiated against 10 officials. Action was also initiated to recover an amount of Rs.61,000/- in one case where full electricity charges were not levied due to unauthorized tapping of electricity.

During 2013-14, 54 complaints were received and 49 complaints were investigated / disposed. Disciplinary action was initiated against 4 officials based on the investigation.

Generally, verification of complaints and preventive checks in sensitive areas are being continued. Employees with doubtful integrity are kept under surveillance. The tenure of officials in sensitive posts are being monitored. Periodical transfer of official in sensitive posts is being ensured.

Action is being taken to spread awareness about Vigilance among the staff. Vigilance Awareness Week, 2013 was observed during the period 28th October to 2nd November, 2013. The main function of the Vigilance Awareness Week was conducted jointly with Southern Railway on 28.10.2013. A seminar on DAR proceedings especially related to the framing of charge sheet was organized for Senior Supervisory Staff. Special lecture on Vigilance issues in Quality Management System in Production Unit was also organized for the officers in the grade of JAG and SS level of all branches. In addition, during the week, essay, slogan and quiz competitions were also organized for the employees.

ICF Vigilance is maintaining close liaison with other investigating agencies like CBI, Vigilance units of other Zonal Railways etc.

EARNINGS

Due to vigilance activities, earnings to the tune of Rs.61,000/- was achieved.

ACHIEVEMENTS

A quality audit of fire retardant material was conducted during January/February, 2014. It was noticed that some of the lots tested were not meeting the specified requirements. The result of the audit was conveyed to Railway Board / RDSO. RDSO has initiated action to reassess the vendors of the above items.

IT CENTER

ERP

Though ICF had Gone-Live with ERP in Feb' 2012., an enormous amount of work relating to the switch-over took place during the period under review. Several efforts were taken to stabilize the modules pertaining to production planning, materials management, plant maintenance, quality management and product costing – in terms of training staff, fine-tuning the processes / reports by actively involving the concerned users and the consultant, so as to make the software as close as possible to requirements.

Switch-over to SAP Payroll happened in Jan'2013. No major issues have cropped up as a result of the switch-over and dispensation of legacy. Enormous amount of efforts taken during the year to analyze and minimize the differences with legacy payroll has helped in achieving a smooth transition.

M/s SAP India has awarded ICF the coveted Annual award for Best Implementation of HR & Payroll under the public services category in India.



MATERIALS MANAGEMENT

a) Purchase Module

Developed and implemented web based online purchase module in Oracle database with open source technologies viz., Apache and PHP. Interface programmes were developed to integrate

the system into SAP as purchase module is not covered under ERP. Stock & Dues and other major reports were developed and made available in purchase module.

b) Non-stock Items

Though Inventory Module is implemented, non stock items were not brought into the system as there was no system to assign unique numbers to the non-stock items. A system is devised, developed and implemented to assign unique numbers to non-stock items. Interface is developed to transfer the non-stock purchase also to the SAP system so that receipts could be taken from the SAP system similar to the stocked items.

c) On-Line PR

Further to the implementation of on-line PR in PP Module, necessary interface programs were developed in purchase module to generate demand by the system without the user intervention. That is when PR is sent online to stores, Demands will be automatically generated in purchase Module and the net procurable quantity is arrived by the system and reflected in purchase proposal.



HR (Payroll and Incentive)

a) SAP HR Post Implementation Maintenance

The Payroll module was switched over from legacy to SAP ERP System from January 2013. The implementation was most complex one involving more amount of customization.

Though the implementation was very successful there have been issues arising out of the system from the standard and customized components. The overtime calculation had thrown up many issues in the post implementation phase, which were tackled efficiently with due updates to the system in such a way the end users are not affected. A number of complaints were received in the printing of salary slips, which were attended to. The correction of font size was one of the issues which was accomplished using the SAP tool SMARTFORMS.

b) SAP HR Reports

The standard reports provided by SAP could not be really used for ICF kind of requirements. The required reports for the bill sections, time offices and Accounts section (post audit function) were developed completely in-house using the tool ABAP (Advanced Business Application Program). The reports cover a variety of master data change reports, exception reports, bill reports, retro worksheets etc.

c) Income Tax

Since a mid-year switch over was done for SAP Payroll, the printing of form 16 and generating E-return data from SAP was a difficult job. Additional efforts were required to generate the reports using data imports and work-arounds and the job was completed successfully. The Income tax changes are available in the form of Patches provided by SAP. Since ICF payroll was implemented with customer specific changes provided by SAP, the patch update could not be performed. In the absence of patch, the new rules such Tax credit etc., were implemented with work-arounds by means of ABAP programs developed in-house.

d) SAP Annual Configurations

There are annual configuration requirements such as updating Holiday calendar, which is fundamental for Time management function of SAP. In the absence of external support, the tasks were carried out in-house with required accuracy.

e) Leave Entry

When an employee has got sanction for Leave on Average Pay (LAP) and he has no sufficient leave balance in his leave account, the leave has to be updated to the system as Leave on Half Average Pay (LHAP) or Leave without Pay depending on the leave balance available. For this purpose, bill section users wanted leave entry screen showing leave balances. The requirement was not supported by SAP, and a fresh leave entry screen was provided to the users, using in-house ABAP development.

f) Recoveries using Balances and Totals

The recovery method equivalent to the legacy Non Standard Deductions were provided in SAP with the need to enter two screens separately for Balances and Recovery rates. In order to help the users, a combined screen was provided in which single entry will update both Balance and recovery wage types. The system also will show the pending recoveries to enable the users to adjust the rate recoveries accordingly.

g) Recovery of Over Payment in Installments

SAP HR system does not provide for recovery of the Overpayment dues if any in installments. In legacy system such overpayments were processed separately and the amount was recovered in installments applying specific rules. An alternate system was developed to identify the overpayment and recover in installments as per User requirement.

h) Off-cycle Payroll

To eliminate preparation of manual bills, the system SAP HR off-cycle payroll is implemented. The users have to enter the payment details into the system and the system can process an off-cycle payroll with salary bills, Bank data and CO7 as outputs.

i) Interface data with PB Computer System

All interface data requirements from Personnel Branch, in order to update the legacy Personnel management system, were gathered and solution provided by developing ABAP programs for each of the data request.

j) Arrear payments to Retired Employees

Processing arrear bills to retired employees was implemented by configuring SAP and developing programs. Now the arrear dues to retired employees such as DA, overtime, Pay, NDA etc can be worked out for their serving period and working sheets are provided to Bill sections for processing payment to retired employees.

k) Arrear Transport Allowance

A major issue was faced in the post SAP implementation with respect to calculation of Transport allowance. Whenever DA rate are revised with effect from 1st of January or July, the artisan staff having wage period 23rd to 22nd were granted Transport allowance with new DA Rate. Alternate solution was developed to calculate the pro-rated transport allowance and recover the arrear dues from employee.

l) Income Tax E>Returns

The E-return data from SAP was not tallying and had issues connected with Artisan wage period and Alternate Financial year. An alternate solution was provided to prepare E-return data from SAP for the purpose filing the returns.

Financial Management Information System – Costing Improvements

IT Centre has developed certain user-specific programs for speeding the process of Cost Report Finalization leading to significant reduction in the cycle time involved in the analysis of bookings to Batch Order after the dispatch of the last Shell/Coach. Since these programs offer help in the form of information relating to bookings to multiple batch orders as against the requirement and previous batch order bookings, identification of un-cashed material requisitions, material issues that have taken place through the legacy system, adjustments, shop-wise labour bookings etc., these innovative steps recently initiated by the IT Centre through ERP have lessened the burden of staff dealing with the particular function in Mechanical and Accounts departments.

Production and Planning Control

a) Print Control System for prevention of duplicate print of Job cards/Route Cards

A system within SAP has been developed to raise a request for printing Job Cards/Route Cards by the user. The system will store the request in a database, which will be accessed by the Console section to see the requests of the users.

The Console staff will wait for consolidation of the requests through the day, and would extract the final requests at the end of the day. These requests will then be executed for print of Job Cards/Route Cards. The various requests for all the different types of Sale Orders and Production Orders that are issued by the user departments, are consolidated under on umbrella.

The data will stay in the database, and will disallow the raising of duplicate requests. The system will also hold the requesters' user name, and the date and time of request. Similarly, after printing, this system provides for the update of the printing time and date, and the user name of person printing it. The users can access all the details via a query transaction code, available to them.

The system ensures minimal waste of stationery, due to consolidation of requests. It also avoids duplicate requests and duplicate printings. Further, it also provides the status of a person's request online. Hence, they need not ask anyone to know the status.

In short, the system provides a win-win situation, for all stakeholders, as far as the printing of Job Cards/Route Cards is concerned.

b) Online Purchase Request (PR) System

Whenever the MRP program is run at Material Planning Office, all the PRs which are generated from ERP system should be made available at Purchase Module for purchase action at Stores.

Features:

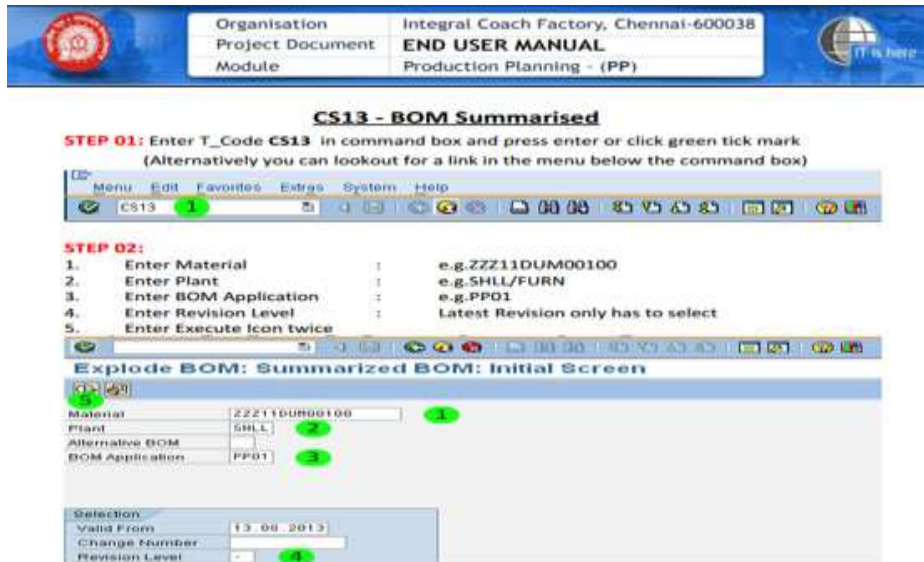
- Separate login provided for each user for authentication and traceability.
- Provision is made for sending PRs electronically from MPO to Process Planning with requisite remarks for updating BOM.
- Provision is made for sending PRs electronically from MPO to Design with requisite remarks for description / special conditions vetting and uploading of drawings/specifications in ERP system.
- Provision is made for sending Approval of PRs electronically and sending of the same from MPO to Stores online.
- Seamless electronic transmission and registration of received PRs at stores to online purchase module maintained external to ERP system.
- Status of PRs from generation to the final stage is provided in MIS report for easy monitoring.

c) End User Manual

Process wise end user manuals, along with SAP GUI screenshots and search facility, have been developed for the effective use of SAP end users. This has gone a long way in self-tutoring of the users as also tutor-let training. This provides SAP navigation ability to the users at finger tips, as the manuals enable even novices to learn SAP and its navigation. This has been extremely useful for the effective implementation of SAP-ERP in ICF.



Information Technology Centre				PRODUCTION PLANNING MODULE	
IT is here		Integral Coach Factory, Chennai-38			
HOME		End User Manual - PROCESS PLANNING (PLG)			BACK
SLNO	DEPT	DESCRIPTION		TCODE	
1	PLG	Sales Order Planning		MD50	
2	PLG	List of Parts		ZPP PQ11	
3	PLG	Change Work/Load Center		CS02	
4	PLG	Change Sales Order		VA02	
5	PLG	Job Passing Through Load Center		ZPP Q005	
6	PLG	Create Work/Load Center		CR01	
7	PLG	Create Sales Order		VA01	
8	PLG	Material Wise Details for Requirement Plan		ZPP MATYP	
9	PLG	Change Material BOM		CS02	



Network

- Finalized Annual Maintenance Contract to entire campus wide network including active and passive components.
- Additional 300 information outlets were provided in ICF LAN at various location of Shell and Furnishing division including Administrative buildings. This enables the users to access the centralized applications viz., ERP and other web based portals.
- Wireless point-to-point connections were commissioned at various locations inside the shop floor to have redundancy network connection to minimize the downtime and improve the application performance.
- To improve the performance of internet and reduce downtime an additional 2 Mbps lease line is commissioned with load balance at IT Center
- A centralized Patch Management system is installed at IT Center to apply patches to all the systems connected in LAN.

IVRS (Interactive Voice Response System)

Developed and implemented IVR (Interactive Voice Response) System to provide services to employees and Vendors. The features available in the system are:

For Employees:

- PF Balance and Last loan availed details as on previous month.
- PF Loan application status viz., application number, rejected status, co6/co7 details etc.,
- Leave balance and last leave availed details.

For Vendors:

- Material supply details for the vendor. Material accepted/ rejected status, Receipt Note, Receipt Order details etc.
- Bills status.

ICF Website

- a) Creation of Purchase Module web page with new look and feel.



- b) **Help Desk-ERP**

- ERP Help Desk is used for all the users of ERP to Login their complaints or issues.
- SAP related issues and other modules like Basis, Network, Hardware and Purchase System related issues would also be taken up through Help Desk.
- Officers-in-charge would receive their module related issues from users side and forward it to concerned functional consultants to provide solutions.
- HOD's can view in all the issues posted by the users of all modules including SAP.



HelpDesk -ERP

[Closed Issues](#) /
 [SAP](#) /
 [General](#) /
 [Basic](#) /
 [Network](#) /
 [Hardware](#) /
 [Contact Portal](#) /
 [Hardware System](#) /
 28-03-2014

[English](#) /
 [हिंदी](#) /
 [TTC](#) /
 [Status](#) /
 [Downloads](#) /
 [Help](#)

[New Reports Required](#) /
 [New Reports Provided](#)

Login

Username:
 Password:

Username : "Employee Number"
 Password : "Date Of Birth Separated By Dot"
 Example : '24.06.1987'

Material Availability Forecast

- To create and edit a production plan for financial year from 1 to 12 months as needed.
- Details and Summary of surplus, shortage and critical items.
- View and delete critical items.

 Information Technology Centre Integral Coach Factory, Chennai 38 Material Availability Forecast									
Program		Critical Item	Summary Reports		Logout				
SLNO	CoachCode	CoachDesc	InstDog		Apr	May	Jun	Total	
1	203	SG CB	2039062200005		0	0	0		1
2	236	SG FACCW	2369070200007		3	3	3		2
3	242	SG SLRD	2429020200004		12	12	12		3
4	251	SG SCZAC JS	2519020200001		0	0	0		4
5	252	SG GSCZ JS	2529020200009		0	0	0		5
6	268	S WGACCW	2689070400009		15	14	14		6
7	268	S WGACCW	2689070400011		18	14	14		7
8	206	SG GS	2669062200007		23	24	25		8

c) Rajbasha Website

As per MRA/ICF direction designed and developed Rajbasha web site with new look and feel.



PROGRESS OF HINDI

Organization

Rajbhasha Organisation is instrumental in implementation of O.L. Policy of the Union in ICF. It is looking after the Progressive use of Hindi within the limits of OL Act & Rules. It is engaged in Translation, Training of staff in Hindi and Implementation of Annual Programme and the directives issued by the Railway Board from time to time. It is functioning under the administrative control of Mukhya Rajbhasha Adhikari and Mukhya Rajbhasha Adhikari is assisted by Dy MRA and Senior Rajbhasha Adhikari along with two Sr. Translators, Six Jr. Translators, One Office Supdt., and a Stenographer.

Translation

Rajbhasha Vibhag is undertaking all types of Official translation work i.e letters, forms & the documents coming under section 3 (3) of OL Act as well as the translation of legal and technical documents.

Forms used at ICF are all translated & printed in bilingual form.

GM's monthly Periodical Confidential Demi Official (PCDO) letter and other HODs' MCDO letters were sent to Railway Board in English and Hindi bilingually.

Invitation cards of Railway Week Celebration, Rajbhasha Utsav & other such occasions were issued in Tamil-Hindi-English trilingual form, besides other publications of ICF were also issued in Tamil-Hindi-English trilingual form.

Training

During the year under review two sessions of Hindi classes 3 each in Shell & Furnishing Division i.e. total 6 classes were conducted for employees by the Hindi Pradhyapak of Hindi Teaching Scheme, Ministry of Home Affairs. 358 employees were trained during the year. Employees were suitably rewarded securing creditable marks in the Hindi Prabodh, Praveen and Pragya examinations. During the year under review three employees were trained in Hindi typing and 22 employees were given training in Hindi Key board training on Computers.

Incentive Scheme

Various Incentive Schemes introduced by Railway Board were given effect by this administration.

Noting and Drafting in Hindi

The employees trained in Hindi language and Hindi Workshop are motivated to write noting and drafting in Hindi. During the year under review, 66 employees were trained in the workshop. Zonal Hindi competitions viz. Hindi Essay, Elocution and Noting & Drafting competitions were organised at ICF. Employees secured First, Second and Third positions were sent to participate in the All Railway Hindi Essay, Elocution and Noting & Drafting competitions held at Jagajivanram RPF Training Academy/Lucknow.

Official Language Implementation Committee

The Official Language Implementation Committee (OLIC) is functioning at ICF under the Chairmanship of General Manager. The meeting was conducted regularly in every quarter and the committee reviewed the progress achieved as per the directives issued by the Railway Board on the progressive use of Hindi. Agenda and minutes of the OLIC meetings were prepared in Bilingual form. During the year under review 4 meetings were organised.

Rajbhasha Utsav Celebrations

In accordance with the directives issued by Rajbhasha Vibhag/Ministry of Home Affairs and Railway Board, Rajbhasha Utsav was organized at ICF. The celebration was started with a quiz programme on 14th September Hindi Diwas. Rajbhasha Pradarshini was organized on 18.09.2013 and it was inaugurated by MRA/CPO by lighting the 'Kuttuvilakku'. 15 offices of ICF participated in this exhibition. During the course of Utsav, various Hindi competitions viz., Hindi Elocution, Essay writing, Noting & Drafting, Hindi typing on Computers, Light Music, Hindi Hand writing and Dictation etc., were organised for the employees and Hindi Noting & Drafting and Hindi quiz competitions were organised exclusively for Officers. Hindi Storytelling and Hindi Poem recitation were also organised for the wards of employees studying in ICF School. A Hindi letter painting competition was also organised for TTC Apprentices. A Hindi Workshop was organised to impart training in Noting and Drafting to the employees. On the Valedictory day Kavi Goshti was organized and later the winners of the Rajbhasha Pradarshini, Competitions were awarded. Employees secured highest marks in Hindi Prabodh, Praveen & Pragya examinations were also awarded during the function. The celebration was ended with colourful Cultural programme presented by the ICF School Children.

Help Literature

During the year under review, "Hindi Pocket book" and "Rajbhasha Diary" were published as Help literature. Besides, frequently used phrases and expressions used by the Officers on files were prepared and distributed to the OLIC members.

Hindi Library

Four Hindi libraries are functioning at ICF, one each at Shell division, Furnishing division, ICF Railway Hospital and ICF shop floor/Fur. division. Shop floor library is exclusively for the use of employees working at shop floor. A reading room facility is provided at D&D building. Library functioning at Shell division named as "**Thiruvalluvar**" Library has **5355** books, Furnishing division library named as "**Premchand**" Library has **4048** books and ICF Hospital library named as "**Tulasidas**" Library has **2758** books, books were also given to shop floor library so that shop employees could use the library utmost. All the four libraries are attached with reading room facility. Daily newspapers, fortnightly, quarterly and monthly magazines were also subscribed for these reading rooms.

Name Boards and Designation Boards of Officers and all the signboards in this administration are displayed in trilingual form. All rubber stamps available are in bilingual form.

In the Supervisory Module programme, Official Language Policy has been added as one of the subject organised by TTC/ICF. This benefits the staff to answer the questions on OL Policy in the departmental examinations.

Tender notices and Tender advertisements were published in bilingual form in the Newspapers and were also loaded in the Rail net for use of tenderers.

Hindi poems were uploaded every fortnight in the ICF Rail net and the messages were sent to the Officers through SMS so that they read the poems and give their remarks.

"Option of Hindi" for writing departmental examinations were given to the staff.

Employees pay slips were printed in Bilingual form.

During the year under review MRA had inspected four offices and Sr.RA had inspected 16 various offices/Shops. Necessary instructions and guidance were given to Offices/Shops to improve the implementation of Hindi at their workplace.

Hindi Cell bringing out a quarterly House magazine "**RAIL RANJANI**" to encourage ICF staff to keep up their knowledge of Hindi.

ICF had been awarded third prize in the Central Govt. Offices by TOLIC/Chennai for outstanding work with respect to progressive use of Hindi. Shri. R. Aaivu, Dy CPO & Dy MRA/ICF received the Shield and Certificate from TOLIC/Chennai on 28.10.2013 from Chairman/TOLIC, Shri Rakesh Mishra/ GM/S.Rly.

A Technical seminar was organized in Hindi on 19.12.2013 on "Technical requirements related to Safety of Coach Production" and "Development of EMU at ICF". The speakers presented their papers on Power point through slide show.

PRODUCTION

Production Highlights

ICF sustained its record-breaking performance during the year 2013-2014 and produced 1622 coaches, surpassing the previous best outturn of 1620 coaches achieved during 2012-13. With this, ICF has bettered the previous year's production for the 11th time in a row.

The special builds manufactured in 2013-14 include stainless steel AC EMU rakes for MUTP phase-II, SPART rakes and LHB EOG coaches.

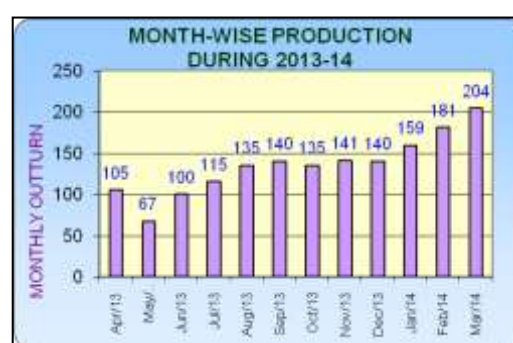
Production of Shells

A total of 1644 shells (1778.61 Equated Shell Units) consisting of 33 types were manufactured in the year 2013-14. These include 71 motor coach shells, 138 trailer coach shells, 26 LHB coach shells, 270 AC coach shells, 1139 and conventional coach shells.

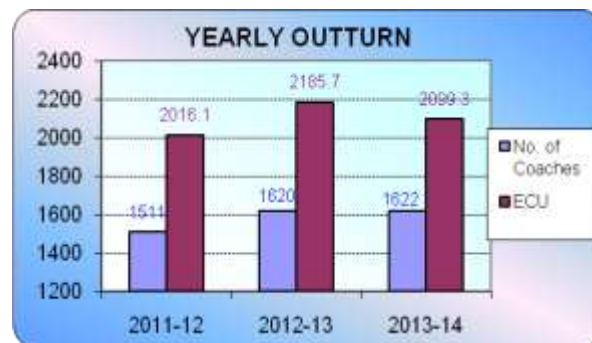
Production of Coaches

During the year, a record outturn of 1622 coaches (2099.31 Equated Coach Units) consisting of 32 types was achieved, surpassing the previous best outturn of 1620 coaches achieved in 2012-13. These include 49 motor coaches, 115 trailer coaches, 25 LHB coaches, 248 AC coaches and 1185 conventional coaches.

The category-wise production of coaches and month-wise outturn during 2013-14 is indicated below:



Comparison of coach outturn during the last 3 years is shown below:



Innovations – Production of New Builds

AC EMU Coaches for MUTP phase-II

First rake of stainless steel coaches of completely new design for MUTP phase-II project was turned out in a record time despite severe constraints faced on the material front.



Production of LS Shells

Two LS shells (GS shells of LHB design) were manufactured for the first time during the year 2013-14.



Production of LWSCN Coaches

15 LWSCN shells and coaches (SCN of LHB design) were manufactured for the first time during the year 2013-14.



LWSCN Shell

CNG DEMU DPC Shells

Two DPC shells for DMU that runs on dual fuel (HSD + CNG) were manufactured.

Other Achievements

- A record 614 GSCN coaches were manufactured in line with the enhanced requirement of these coaches.
- Similarly, 258 air-conditioned coaches (including 10 LACCW) and 33 SPART coaches (11 rakes) were the highest ever produced in a year.
- Manufacture of FIAT bogies commenced during the year 2013-14 and two coach sets (four nos.) of FIAT bogies were manufactured in the new LHB shed.
- For the first time ICF started manufacture of three variants of LHB EOG shells in 2013-14.
- The first FAC coach with twin RMPU was fully furnished. In-house modifications were carried out to suit the new requirement, and validated by Design.

End Part for MUTP-II AC EMU Motor Coach Shells

A prototype end part for MUTP/M was manufactured at Shop-18 for regular production. This is the first time that the straight side wall design has been adopted for EMU shells. The sole bar is of unique design and the teething problems faced in the manufacture and assembly of L-Beam were overcome at the prototype stage. Also the top sheet has higher thickness (4mm) compared to AC/EMU, which is 2.5 mm thick.

Concept of End Part in SPART DPC Shells

SPART/DPC end part was manufactured for the first time at Shop-18. The end part for SPART/DPC is expected to bring down the cycle time of under frame assembly. As a result, more numbers of SPART shells can be turned out. Due to space constraints the existing DPC middle part jig has slightly been modified to assemble SPART/DPC end parts. At present, both the DPC middle part and SPART end part can be assembled in the same jig.



SPART DPC End Part under fabrication at jig stage

Conversion of 5th line body fixture as flexi fixture

The existing body assembly fixture in the V line of shell assembly shop was exclusively used for EMU shells. The fixture was converted into a flexi fixture so that it can be used for both MUTP AC EMU shells and conventional shells.

Modification of 6A Under frame Welding Fixture from LHB Hybrid to LHB EOG

6A under frame welding fixture was originally designed for manufacturing LHB hybrid under frames only. Since production of LHB hybrid was stopped and switched over to LHB EOG, the existing fixture was taken up for modification and modified with new locating pin arrangements to assemble end part with FIAT type body bolster and manufacture LHB EOG type under frames. This modification was carried out by Tool Room staff within a short span of time.

Modification of 3rd line EMU Roof Jig

To meet the increased demand of conventional builds in the middle bay 3rd line, EMU roof jig was taken up for conversion. All the EMU cantrail beds were gas-cut and removed. The bent cantrail beds were strengthened by providing stiffeners. The conversion work was carried out in a record time of 10 days.

Conversion of Welding fixture for LHB hybrid

Welding fixture for LHB hybrid type end part was converted to suit LHB EOG type end part. The existing DPC end part jig was converted to meet the production requirements of conventional shells in Shop-18.

Bio-Toilet system

All conventional and AC coaches manufactured in 2013-14 were fitted with Bio-Toilet system as per the directives of Railway Board.



Braille stickers

In order to provide information to visually challenged passengers, **Braille stickers** were procured and provided in coach no. ACCN 99.



Shops have converted normal windows to emergency windows by carrying out a few modifications which helped in timely dispatch of coaches, as emergency window was appearing in holdup item.

One number of portable circular saw available at Shop 54 was modified and converted into a table-mounted saw for cutting rolls of masking paper to suit the colour scheme of coaches.

Modified Saw



Alteration of seat frame:

DPC's 2-seater seat and 3-seater double seat were modified to accommodate the filter frame below seat. Two leg seat altered to one leg and arrangement made to fix the seat in side wall. (This modification has been done for 04 coaches at the rate of 04 nos of 2-seater and 1 number of 3-seater).



Redesigning of MMD Gauge

The existing maximum moving dimension (MMD) gauge had to be redesigned to suit MUTP coaches. A team of staff from shop 81 was formed to execute the task and the gauge was erected within two weeks, conforming to the specifications, which was certified by Inspection department.



- A safety device has been installed in the 3rd booth of paint which shall always sense the movement of coach and automatically stop the winching when the coach has moved out of booth. This will prevent the coach from falling into the traverser pit.
- Despite the reduced staff strength at Shop 34, seats and berths to the tune of 8 SCN coaches, 5 SLRD coaches, 2 SV DPC & 2 SRMV coaches were manufactured and supplied to assembly shops to keep pace with the dispatch schedule.
- 24 Nos. of Stands were fabricated for manufacturing the electrical harness of MUTP coaches which minimized fatigue and improved working environment. Previously it was done on the floor.



Problem-Solving

- 10 coach sets of vestibule door assembly for AC coaches were manufactured at short notice as the trade item had failed.
- ICF took up manufacture of stainless steel partition frame as the vendor had failed to supply the partition frame for LSCN, and three shells were handed over to Furnishing division.
- Owing to non-receipt of skid mount bracket (ICF/SK 3-1-1-175) for SPART, the item was made in-house with accurate dimensions; five coach sets of the item were supplied to Assembly shop.
- **Manufacturing of vestibule door assembly:** 10 coach sets of vestibule door assembly for AC coach manufactured at short notice as supply of trade item had failed.



- 40 coach sets of folding tables for SCN coaches were manufactured by Shop 32, in-house, due to the failure of trade to supply this item. Timely manufacture and supply of these partitions ensured dispatch of coaches in time.
- 100 nos. of Litter Bins were manufactured in-house out of stainless steel due to failure of trade to supply FRP litter bins. FRP litter bin was a hold up item appearing in the highest level stores co-ordination meeting for more than 14 times. There are very limited vendors for supply of FRP items.
- Due to failure of trade for supply of powder coated cantrails for LSCN & LS coaches, in-house manufacture of the cantrails out of 1mm aluminium was undertaken by Shop 33. Timely manufacture and supply of these items ensured that the LHB coaches were ready in time for MM's visit.
- 30 coach sets of Expanded Metal partition for SCN coaches were manufactured in-house due to failure of trade. Timely manufacture and supply of these partitions ensured dispatch of coaches in time.
- The toilet indication light bracket is made up of FRP, but due to non-availability of the item, 10 nos of toilet indication light bracket were manufactured out of aluminium in a single piece. The bracket has no welded joints as it was processed using "development of surfaces" method.



- Due to the rejection of SLR equipment door, the dispatch of 10 SLR coaches was held up. To avoid the delay, the twin door type was modified to a single door type and manufactured in-house using the available material, thus enabling timely dispatch of coaches.

Reclamation / Utilization of Materials

240 nos. of FRP window for hybrid LHB coaches were reclaimed in shop-30. The windows had been purchased 3-4 years ago for LHB hybrid coaches and were kept in the open which rendered them non-functional due to rusting.

They were segregated and the following work was done:

1. Cleaning and derusting of equalizing device by applying kerosene and hence making it functional.
2. Cleaning of Glass shutter, FRP shutter and FRP body.
3. Cleaning and making shoot bolt functional.
4. Repainting of complete window in shop-34 paint booth.
5. Rechecking the functioning of window after repainting before fixing in coach.



- 29 coach sets of 'end part', a hybrid coach surplus item, was consumed out of 126 coach sets after modification. The balance 97 coach sets' material will be consumed for LHB EOG shell production during 2014-15.
- Inlays purchased for hybrid LHB are not matching with EOG LHB. Due to this a lot of inlays have become non-moving and cannot be used in any other types of coaches. With the help of two employees of shop-30 the inlays were modified with plasma cutter and fixed in six coaches. The modification will be continued in all hybrids Inlays till the available stock is exhausted.



Production of Helical Springs

During the year 2013-14, the spring shop achieved a record production of 43,126 springs, compared to 43,100 springs during 13. The details are as follows:



2012-

Description	Capacity	Target	Actuals 2013-14	Actuals 2012-13
For consumption of ICF	35000	38096	36507	37013
Spares manufactured for Zonal Railways and RCF	5000	5004	6619	6087
Total	40000	43100	43126	43100

Assistance Rendered to Zonal Railways

Spares involving 54,431 man-hours at a value of `7,87,45,943/- were supplied by Shell division of ICF to Zonal Railways during 2013-14.

CHAPTER III

PRODUCTION PLANNING AND CONTROL

Production Planning

Necessary production documents were released promptly both by Shell and Furnishing divisions to ensure smooth flow of production of new design of coaches.

Material Planning

The material planning wings of Shell and Furnishing divisions issued procurement memos and S-1302 indents for all the special coaches promptly. Material requirement reviews of the items were sent to Stores in time to avoid delay in procurement of items. Timely procurement action was taken in line with the revisions in Production Programme.

Activities of the Material Planning Organisation during 2013-14 are tabulated below:

	Shell Division	Furnishing Division
No. of Procurement Memos issued	1290	3654
No. of Reviews sent to Stores	6032	9304
Technical scrutiny of Tender Files	545	2157
No. of S-1302 Indents issued	28	380

Measures that Resulted in Financial Savings

Utilisation of Rusted Light Rails and Waist Rails

30 coach sets rusted light rails & waist rails were de-rusted and thoroughly cleaned and used in conventional shells resulting in savings of `6,87,690/-



Corroded light rail & waist rails



Light rail & waist rail- cleane



Light rails & Waist rails assembled in side walls

Lavatory without Mouldings

The provision of mouldings in the lavatory is a cumbersome process due to cramped working space. Two employees of Shop 30 have developed a lavatory without mouldings using 0.8mm canvas stainless steel sheet. It had been fitted in SCZ/JS 288 and was found to be satisfactory besides offering the following advantages.

- ❖ Savings in material cost due to avoidance of mouldings
- ❖ Saving of 18 man days
- ❖ Reduction of cycle time
- ❖ Increase in lifespan of lavatory due to usage of SS material
- ❖ Easy to maintain
- ❖ Suited for mass production
- ❖ Improved aesthetics and modular type



Measures Taken to Improve Quality of Products

Modification of VI line roof welding fixture to assemble A/C trough in jig stage



Modified Roof Assembly Fixture

Sixth line Roof welding fixture was modified to assemble A/C Trough in fixture itself. It is unsafe to assemble A/C Trough in trestle stage. Hence, in order to facilitate the assembly of A/C Trough in jig stage, cantrail bed was raised by 125mm by providing boxes at intermittent points. Clamps and stoppers were also modified accordingly to ensure quality assembly of A/C trough.

Introduction of welding fixture to Module for Battery Box.

In Shop-11, the module for battery box to Drg.No. 286 11 502 000 01 alt 'a' are being assembled in the existing very old fixtures. The battery box will be fastened with the channels assembled in the module. Previously, the stopper arrangements for supporting the channels are provided outside to accommodate the channel during assembly. Frequently customer complaints have been received about channel assembly. In order to overcome the customer complaints and to avoid re-work, one welding fixture is made in-house. In this, the stopper assembly is provided inside to accommodate the channels there by the variation in channel flange will not affect the assembly.

The center distance 440 mm will be ensured in this method which in-turn will ensure the drilling hole center dimension. Then battery box will be fastened with the channels assembled in the module. By the introduction of new fixture, the re-work of defective modules has been eliminated and the customer complaints have been resolved.

Stoppers in old fixture



Stoppers provided outside in old Fixture

Stoppers modified in new Fixture



New Stoppers provided inside in new Fixture

Modified New in House made Module Fixture



To ensure proper setting of camber the following activities were carried out:

- a) Four nos. digital camber checking gauges were manufactured for checking camber in body assembly stage.
- b) To avoid drooping of end camber, 12 nos of jacks were manufactured in-house and provided in 3 body assembly jigs.
- c) Two Nos of camber setting jacks were manufactured to ensure proper camber alignment.
- d) First line under frame jig was provided with hold down 'C' clamps to minimize the camber deviation.
- e) To minimize the camber deviation in shell assembly stage 6 B body assembly fixture, under frame supporting structure has been modified to locate camber block in sole bar area thus the camber deviation due to cross member deviation was eliminated.

Change of baffle in ducting arrangement of AC coaches

The baffle inside the ducting arrangement for AC coaches has been changed to Aluminum baffles with better securing arrangements. This has resulted in better workmanship and improved distribution of conditioned air besides arresting leakage.



For first rake and second rake of SPART, layout of brake pipes was provided with stainless steel reservoir and stainless steel pipe fittings instead of MS Reservoir and MS pipe fittings.

A detailed FOO2 analysis of Furnishing division was carried out on repetitive defects and corrective action taken were presented to all the stakeholders and as a result of collective effort, the overall defects came down to 12.4% from 20%.

Improper fitment of cant rails had led to gaps in the sidewall paneling. The staff concerned were suitably educated which led to elimination of the defect.

Improper fitment



Proper fitment



Shops have developed a new design of fixing arrangements for bottle holder which will totally eliminate the customer complaints regarding the fixing of the bottle holders.



A study was done on the recent customer complaints regarding stagnation of water in the lavatories and the following measures were taken to solve the problem:

Channels of a length of 800mm and of different heights of 40 mm, 50 mm & 60 mm were provided below the lavatory inlay at appropriate locations. It was noticed that the water stagnation had reduced.

Measures to Improve Productivity/Reliability

(A) Productivity/Reliability of Machinery & Plant

Uptime status of M&P during the year 2013-14:

• Uptime Percentage of 141 Vital machines	:	89.03 %
• Uptime Percentage of all machines	:	94.82 %
• Uptime Percentage of Transport Vehicles	:	94.00 %

Inv # 8975- Spring Load Testing machine: Due to ageing existing pneumatic operated safety guard unit did not work satisfactorily. Hence, a modified Safety guard with manual operation has been fitted in the machine.

Inv.No.1411 - Hydraulic Shearing: Ram guide ways, balancing ram cylinder and Bed adjusting cylinder seals and wiper seals have been replaced to eliminate recurring problems.

Inv.no.8979 - Blumberg Spring End Grinding Machine: All the lubricating lines in the bed, cartridges have been re-laid. Slackness in the vice jaw unit eliminated by providing 20mm thick plates with fasteners on both ends to hold the vice jaws firmly.

Inv.No.5392 - Vertical Turret Lathe: Existing telescopic guard, which is of flimsy design, has been replaced with in-house made lightweight stainless steel metallic guard to eliminate recurring problems on account of the guard.

Inv.No.7160 - Zayer Edge Milling Machine: This vital machine had come under breakdown due to erratic clamping of Rotary Head Unit, leading to hurling away of components being machined. The Rotary Head Clamp is a complex assembly with 14 hydraulic cylinders with the actuating system working at a system pressure of 150 kg/cm².

In the absence of Original Equipment Manufacturer's maintenance support, earnest efforts were made by Millwright staff, who attended to this latest technology machine and functionally restored it.

(B) Productivity Improvement Measures

- Elimination of grinding while machining side bearer housing in BG Bogie Bolster as per alt 'C' to drg no. T-04-656.
- Welding of centre stiffener half to drg no. T12511001 alt-'P' (Chamfer) changed to reduce weld volume and thereby increased productivity.

Modification of roof ventilation hole to suit lifting arrangement.

At present a lifting hole is provided in the roof for lifting the shells and the hole is closed after lifting the shells. As an improvement measure, the existing roof ventilation hole has been modified to accommodate lifting arrangement. This has eliminated the additional operation of closing the lifting hole.



Improved method of converting lifting hole into roof ventilator lifting hole
Shell No: GS 5780 & SCN 4082

In order to reduce the jig occupation time and improve production, end part for conventional coaches has been introduced.

Curtain rod clamping arrangement

The curtain rod clamping arrangement comprises five different types of clamps (at room side, side upper berth, side lower berth). This makes it cumbersome for the detail shop-33 to manufacture the above clamps leading to a delay in schedule. Moreover assembling these different types of clamps in the coach at various locations need various types of fasteners, tools and machines.

A single Type of clamp was introduced and location of clamps was also changed.

This trial was made in FACCW 207 by the modified clamp which yielded good results and the assembly time was also greatly reduced. The details manufacturing time also reduced. The details required for fixing the existing clamps at the shell stage in partitions is also eliminated which in turn reduced the welding assembly time and number of items. It also makes the fixing/removing of electrical fittings in the coaches much easier than before.



Existing Clamps (Five Types)

Modified clamp (Single Type)



Measure Taken to Improve Reliability of Coaches

Modified hatch door in DEMU/DPC coach

The hatch door of DEMU DPC has been replaced with the modified side wall duly welded with louvre to increase the strength at engine area where the sole bar crack was reported frequently. This design was implemented from shell no. 195.

DEMU DPC HHP modified side wall duly welded with louvre at engine area



Modified flooring in kitchen area of (WCB) Pantry car

The existing kitchen area floor support of Pantry Car has been modified with 5 rows of corten steel channels welded longitudinally making downward slope towards centre both from side wall side and partition side in order to ensure efficient drain of waste water through drain holes. This new design will reduce the corrosion at the kitchen area. This new design was implemented from shell no. 488.



Improvement in Air flow in DA Set Room of SPART

To improve air circulation in 125KVA DA set room and to reduce the temperature inside DA set room (HS SPART), it was recommended to replace the coach wall louvers (ICF scope) in the 125KVA DA set room. The modification resulted in improved air flow and reduction in temperature to the desired level in the DA set room.

Existing coach wall Louvre



Modified coach wall Louvre fitter



Improvement in Duct fixing of FACCW Coaches

The following alterations have been implemented in WGFACCW/CRW/14 & 15 duct fixing of first class side to improve the conditioned air efficiency.

1. Width of the conventional air passage reduced to increase the velocity of conditioned air thro diffuser.
2. In diffuser (Inside) a small baffle was screwed as a stopper.
3. Width of the return air duct passage increased.
4. In Room A - Inside the sunk-in partition two dummy sheet covers provided near entry of return air duct.
5. In room A Baffle plate arrangement was changed to get conditioned air even when only one RMPU is operated.

New Design of RMPU Drain Water Discharge in SPART TC Coaches

In SPART TC coach, the RMPU drain water was falling on the Inter Vehicular couplers fixed on the end wall of the coach. To overcome this problem, a new design was envisaged and implemented in the coach. It consists of a rectangular box which collects the RMPU drain water and discharges it to the bottom of the coach which ensures that the RMPU drain water will not fall on the Inter Vehicular couplers.



Modification in Hatch door of AC EMU Motor coach

In-house modification in AC EMU Motor coach from heavy fabricated design to aluminium Hatch door was carried out to provide maintenance access and improved air flow. The entire modification was conceived and carried out by shop floor.



QUALITY SYSTEM**Integrated Management System including Quality Management System to ISO 9001**

ICF has an established Integrated Management System with regard to Quality (QMS), Environment (EMS) and Occupational Health & Safety Management (OHSAS) for design, development, manufacture and commissioning of railway passenger coaches.

During the year 2013-14 three internal audits were conducted, and the audit reports and non-conformities were discussed in Departmental Representatives meetings and further presented in Management Review Committee meetings chaired by GM/ICF.

External Certification Audit on IMS was conducted successfully and audit reports were analyzed to close the observations. The certification is valid up to 06.08.2016.

Highlights

- No. of Quality Audits on RITES Pre-Inspected Materials

	No. Quality Audits	Accepted	No. of Rejections	Percentage of Rejection
Shell Division	24	22	02	8.33%
Furnishing Division	28	10	18	64%

- 59 Prototype Inspections with Design wing have been conducted for new builds, in addition to regular Inspection, for effective assembly & supply in time.
- 46 Joint Inspections with third party Inspecting Agency (M/s RITES) were conducted and all the cases were upheld.
- 123543 Nos. of QMF002 (Inspection Report) points issued for defects/deviations issued.
- Number of Inspection Demand Notes (IDNs) cleared (From 01.04.2013 to 31.03.2014)

	No. of IDNs Received	Accepted	Rejected	Percentage of Rejection
Shell Division	2311	2100	211	9.1%
Furnishing	2747	2641	106	3.86%

- **Firm Inspections**

No. of Inspections at local firms :72

No. of Inspections at outstation firms :32

Customer Interaction Meetings

Two customer interaction meetings were conducted with Zonal Railways during the year 2013-14 and 72 major points were discussed in the meetings. The details are given below.

	Date	No. of Participants	Participant Railways
First Meeting	7 th & 8 th Aug. 2013	19	CR, WR, SR, SCR, SWR & ER
Second Meeting	22 nd & 23 rd Jan 2014	35	SER, CR, WR, NR, SR, SCR, ECoR, ECR, NCR, SECR, SWR & ER

Status of the Major Points Discussed during Customer Interaction Meetings

Status	No. of Points
No. of points implemented	34
No. of points under implementation	18
No. of RDSO Items	7
No. of points for which design/drawing is under review	5
No. of points under study	3
No. of points that are not technically feasible	2
Quality-related points	2
Points involving trial	1
Total	72

Penal Recovery Made from Vendors

Penal recovery was made during the year 2013-14 from vendors who failed to redress the warranty claim. The details are as follows:

Sl. No.	Name of the Firm	Description of Failed Item	Amount Recovered	Remarks
1	M/s. Crompton Greaves Ltd., Bhopal	Failure of traction alternator bull gears (8 nos.) Complaint raised by Western Railway.	Rs.16,92,000/-	Action has been taken to refund the amount to the vendor after they replaced 8 nos. of bull gear to DME / DEMU Car Shed – KKF/WR
2	M/s. Kineco Pvt. Ltd., Goa	Scratches in polycarbonate windshields in DEMU/DPC. Complaint raised by South Western Railway.	Rs.3 lakh	
3	M/s. Hindustan Fibre Glass Works, Vadodara	Scratches in polycarbonate windshields in DEMU/DPC. Complaint raised by South Western Railway.	Rs.3 lakh	

Quality Audit on Fire Retardant Materials

ICF conducted Quality Audit on fire retardant materials based on the advice received vide RDSO's letter no. MC/ACF/Fire Accidents dt. 21.01.2014. Penal action was taken against the suppliers of sub-standard material.

Summary of Quality Tests Done

Sl. No.	Item	Firm	Testing Agency	Results
1	Fire retardant curtain cloth	M/s.Delkon Textiles, Faridabad	M/s.CPRI, Bangalore	Failed in LOI and toxicity index
2	Vinyl coated upholstery fabric brown	M/s.Milton Industries, Mehsana	M/s.CPRI, Bangalore	Failed in LOI and toxicity index
3	Densified thermal bonded polyester block	M/s.Durable Polymer, Lucknow	M/s.CPRI, Bangalore	Failed in LOI and toxicity index
4	PVC flooring sheet brown	M/s. Responsive	M/s. CPRI,	Failed in

Sl. No.	Item	Firm	Testing Agency	Results
		Industries, Thane	Bangalore	toxicity index
5	Fire retardant curtain cloth	M/s. Jaishree Textiles, Hooghly	M/s. Shriram Institute of Industrial Research, Delhi	Passed
6	Vinyl coated upholstery fabric blue	M/s. Responsive Industries, Thane	M/s. Shriram Institute of Industrial Research, Delhi	Passed
7	Densified thermal bonded polyester block	M/s. Oriental Veneer Products Ltd., Thane	M/s. Shriram Institute of Industrial Research, Delhi	Passed
8	PVC flooring sheet blue	M/s. Responsive Industries, Thane	M/s. Shriram Institute of Industrial Research, Delhi	Passed
9	LP sheet brown	M/s. RB Polymers Ltd., Ahmedabad	M/s. Shriram Institute of Industrial Research, Delhi	Failed in toxicity index

Design Change Proposals

Seventeen design change proposals (QMS/F/004) were initiated for various assemblies, out of which design has been modified in seven cases and the others are under study by Design office.

New Specification for Buffer Assemblies

Several failures of buffer assemblies were reported from various Railways. Design aspects of the same have been studied in detail by the Design wing and a new specification has been made in line with the specification for axle box housing. The new specification ICF/MD/SPEC-252 dt. 10.08.2013 has been issued with the following salient features:

- The material has been upgraded to IS 1030-98: 230-450W, which has superior mechanical properties.
- Radiography test on 10% of buffers of each batch offered for inspection.
- Ultrasonic test on 100% of buffers of each batch offered for inspection.
- Destructive test of 2% of buffers of each batch offered for inspection to examine casting defects like porosity, blow holes, shrinkage, slag inclusion, etc.

All new buffer supplies are as per this specification. 200 nos. of side buffers have been received as per the new specification.

Quality Issues in Adjusting Pull Rods

Based on the complaint from Western Railway regarding joints in Round type Adjusting Pull Rods to Drg. No. ICF/SK3-32 002 alt. Nil in MUTP phase-II EMU coaches, a Quality Audit has been conducted at ICF. The result revealed that the pull rod is made of pieces instead of the single-piece design called for in the drawing.

Based on the Audit Report, the entire quantity supplied by M/s. Bharat Industries, Punjab, has been rejected. GGM/RITES/Northern region has been advised to fix the responsibility for the above lapse on the part of the Inspecting Engineer who inspected the above material.

System Improvement

A laser-based measuring instrument has been procured for measuring camber in coaches. The measurements are being analyzed periodically and appropriate action is being taken to improve the camber in coaches. Also, camber is being measured in fully furnished coaches in order to correlate the readings with the readings taken during the shell assembly.

Customer Complaints

A total of 220 customer complaints were registered during the year 2013-14. Against this, 142 complaints have been closed during this period including 44 complaints brought forward from the previous year.

Environment-Friendly Activities

Pollution Control

- Noise levels at the sections of various shops of both Shell and Furnishing divisions were monitored.
- A contract has been awarded on M/s Aqua Designs India Ltd. for monitoring the effluent treatment
- Ambient air quality is being monitored at three locations each in Shell and Furnishing divisions by engaging a qualified contractor. Eight stacks in Shell division and five stacks in Furnishing division are also monitored every month by the contractor.

Chemical & Metallurgical Organisation

The Chemical and Metallurgical Organization of ICF plays an active role in testing and ensuring the quality inputs and processes employed for coach manufacture. Main activities of CMT organization are:

- Chemical and metallurgical evaluation of various raw materials and finished components
- Process control and quality assurance in the field of welding, forging, spring manufacture, heat treatment, radiographic testing, ultrasonic testing, corrosion prevention and painting

- Periodical testing of welders
- Pollution control and Environmental Management System
- Service Engineering – Failure Investigation and development of materials
- Design and Development activities
- General service including technical evaluation of tenders

Important Activities

1. A development sample for spot welding was subjected to pull test and not found satisfactory due to insufficient fusion. The firm had not submitted sample for chisel test. Report has been sent to Design wing.
2. Helped shop 11 in assessing the performance of newly erected Robotic Welding Machine. Several test pieces were subjected to radiographic test to assess the soundness of weld done by the machine and suggestions were given to improve the quality of welding.
3. Facility was developed for testing Anaerobic Bacterial Inoculum and a trial was conducted on it for the quantitative evaluation of bio-gas produced as per the procedure laid down by DRDE/Gwalior.
4. As per action plan for camber setting, two Quality Audits were conducted jointly by QA wing and CMT on weld quality of shell assemblies of critical butt joint and the reports were submitted to CME/QA.
5. Monitoring of 4 nos. of water-based PU painted coaches was carried out at Trivandrum and Nagercoil coaching depots. Reports indicating DFT and gloss values were submitted.
6. Monitoring of sound level and ambient noise level at various locations in Shell division was super-checked.

Samples Tested

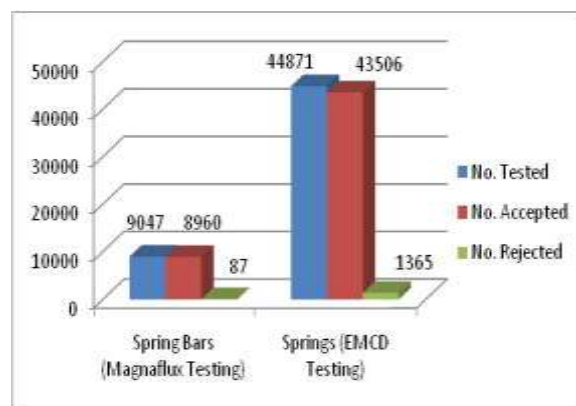
- A total of 93,564 samples pertaining to both Shell and Furnishing divisions were tested and certified during the year 2013-14.
- During the year Rs.10,50,831/- was advised to be recovered from various suppliers and Railways towards test charges.

Magnaflux Testing of Spring Steel Bars

During the year 2013-14, 9,047 nos. of spring steel bars pertaining to different diameters and lengths were tested by electromagnetic crack detector of which 8,960 nos. were accepted and 87 nos. were rejected (0.96%).

EMCD Testing of Finished Helical Springs

During the year, 44,871 nos. of helical springs were tested by electromagnetic crack detector of which 43,506 nos. were accepted and 1,365 nos. were rejected (3.04%).



Heat Treatment

	No. heat-treated	No. tested for hardness
Springs	47,739	7,652
Draw gear items	516	67
Miscellaneous components	23,192	-

No. of temperature measurements: 1400

Radiographic Testing

During the year a total of 484.1 meters of weld length was tested radiographically, of which 14.4 mtrs. was found to be defective. (2.97%). A total of 189 bogie frames were tested.

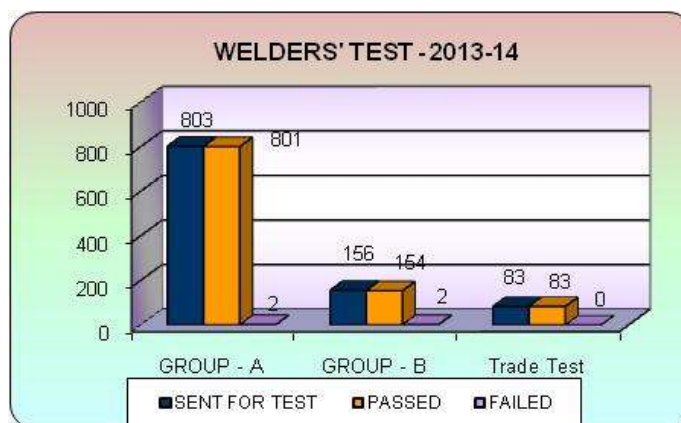
Ultrasonic Testing

During 2013-14, 5,836 axles were tested ultrasonically, out of which 22 axles were rejected.

Periodical Testing of Welders

During the year 2013-14, a total of 1,042 welders were tested, of whom 1,038 have passed and 4 welders have failed to qualify in the first attempt.

	Group-A	Group-B	Trade Test
No. of welders tested	803	156	83
No. of welders passed in the first attempt	801	154	83
No. of welders failed	2	2	Nil
% of failure	0.25	1.28	Nil



Service Engineering – Failure Investigation

The following components received for failure investigations were investigated during 2013-14 and reported. The following remedial measures were suggested:

- CP pin (outsourced item) received from Bilaspur workshop
- Broken spring received from CDO/Bangalore, SW Railway and CDO/BBQ, S Railway
- 2.5mm electrode received from shop 20 as a shop complaint
- CP pin from Jabalpur, WC Railway
- Broken springs received from Tikiapara, SE Railway

Quality Audit

A total of 18 samples were tested during the year 2013-14 as part of Quality Audit in both Shell and Furnishing divisions.

Inspection at Firm

A number of Shell and Furnishing items were inspected on the suppliers' premises.

Strengthening of Testing Facilities

The following testing equipment was procured and commissioned during 2013-14:

Sl. No.	Location	Equipment	Commissioned in
1	Mechanical lab	<ul style="list-style-type: none"> ▪ Digital vernier calipers (2 nos.) ▪ Dial gauge 	October 2013 October 2013
2	Welding lab	<ul style="list-style-type: none"> ▪ Humidity cabinet 	February 2014
3	General lab	<ul style="list-style-type: none"> ▪ Digital Shore D apparatus ▪ Kinematic viscosity bath with 	July 2013 December 2013

Sl. No.	Location	Equipment	Commissioned in
		viscometer	
4	Main lab	<ul style="list-style-type: none"> Conditioning humidity cabinet Equipment for testing of Limiting Oxygen Index 	November 2013 February 2014
5	Spring lab	<ul style="list-style-type: none"> EMCD machine for testing of springs 	April 2013

Training Programmes Executed in 2013-14

Initial Courses

S.No	Category	No. of Trainees
1	Technician Trainees Mechanical and Electrical (DR+CGA+PQ)	151
2	Apprentice Mech (Mech/Elec)	59
3	Act Apprentice	200
4	BOAT Apprentice (Diploma & Graduate)	22
Total		432

Refresher Courses for Other Railways

Total no. of Trainees: 349

Promotional Courses

S.No	Category	No. of Trainees
1	Exposure 50% PQ (Fitter General, Carpenter, Fitter Millwright, Fitter Tool Room, Machinist Sheet Metal, Painter, Welder, Electrician)	460

Specialised Courses

S.No	Category	No. of Participants
1	SPART	42
2	Environmental Health and Safety & Statutory Requirements (EH & SSR)	56
3	Accident Prevention Course	59
4	Linke Hofmann Busch (LHB) Technology	58

S.No	Category	No. of Participants
5	Integrated Management System	100
6	Supervisory Development Programme	110
7	Disaster Management	120
8	Computer-Based Training (CBT)	132
9	CNC	25
10	Material Handling	49
	Total	751

In-Plant / Project Trainees

Total no. of Trainees:1470

Meritorious Performance by Act Apprentices

- Shri P. Sathesh, Act Apprentice (Welder), stood **first** in the All India Skill Competition held at Kanpur in May 2013 and was adjudged Winner among all the regions.
- Around 450 Act Apprentices were engaged during the year 2013-14 in production work of various shops and helped the shop floor achieve the production target.

ADVANCED WELDING TRAINING INSTITUTE (AWTI)

Introduction

AWTI is the first of its kind in entire Indian Railways to provide the much needed technical skills and knowledge in the area of welding, which is the core activity of ICF. It has a well-equipped workshop with modern training facilities for welding. In addition to the welding training needs of ICF, it caters to the training needs of Zonal Railways of southern region and Rail Wheel Factory.

Details of Training Conducted in 2013-14

Type of Training	Initial	Promotion	Refresher	Specialized	Total
No. of Trainees	414	198	1013	225	1850

Enquiries Received for Training

M/s BEML, Pennar Industries and Bollineni approached AWTI for training their engineers and welders. One Vendor Training programme was conducted on cost basis.

Implementation of ISO: 3834 & EN 15085 Standards

- AWTI has been identified as a nodal agency for implementing ISO: 3834 & EN: 15085 certifications at ICF.
- 49 welders were certified as per EN: 287 standards in one position.

- Eight shop floor supervisors were given awareness training in ISO: 3834 & EN: 15085 standards.
- Eighty design engineers were given awareness training in ISO: 3538 & EN: 15085 standards.
- Certificate course on ‘visual inspection’ conducted for inspectors and supervisors of ICF.
- Eight welders from ICF vendors certified in EN: 287 standards on cost basis.
- Awareness programme by outside agency in ISO: 3834 & EN: 15085 standards – tender finalized.

Weld Quality Improvement Initiatives

- Welding procedure testing for the FIAT bogie side frame welding in LHB shed.
- Welding Procedure Specification (WPS) for MUTP stainless steel EMU shells developed for the first time in ICF.
- Weld audit for three shell assembly stages by Indian Institute of Welding was organized by AWTI.
- Quality improvement suggestions given to Design department for “Anchor Link Bracket Welding”.

Certification and Need-based Skill Development

- 99 welders of Carriage & Wagon Works, Southern Rly, were certified in IS: 7310 for one position.
- Special module on Submerged Arc welding was conducted for EWS/AJJ.
- 75 Helpers from RWF were trained as Gas Cutters.

Infrastructure Development

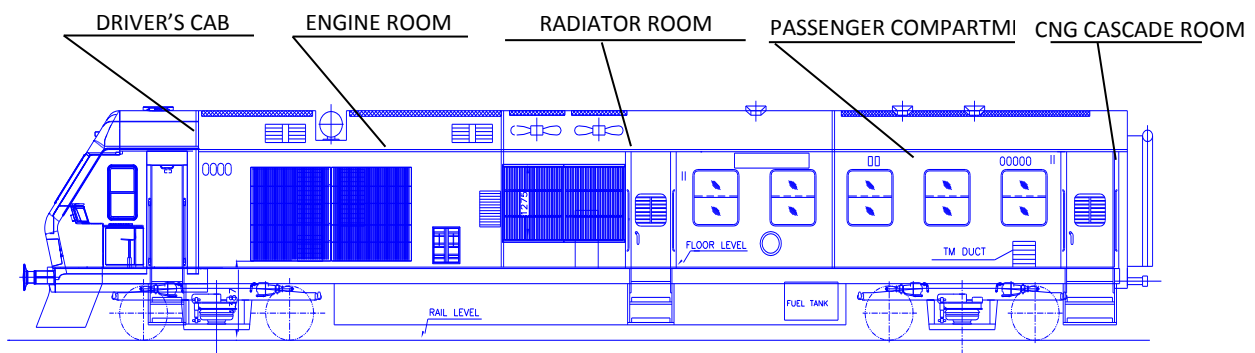
A test rig for fracture testing was developed in-house with available spares from shop floor which would otherwise cost 2.5 lakh if procured.

Revenue Generated

- Total revenue generated during 2013-14: Rs.3,56,373/-

DESIGN & DEVELOPMENT**DEVELOPMENT OF NEW DESIGNS****1400 HP (DUAL FUEL) CNG DEMU**

1400 hp DEMU/DPC that runs on dual fuel (HSD + CNG) has been designed for the first time. CNG conversion kits are supplied by M/s. Cummins India Ltd. against order placed by IROAF. ICF will manufacture 8 DEMU power cars with CNG kits. CNG combustion reduces air pollution comparatively. It is expected that dual fuel engine will fetch 20% diesel substitution.

**Salient Features of CNG DEMU/DPC:**

- CNG DEMU Power Car consists of Driver's cab, Engine room, Radiator room, passenger compartment (ladies) and CNG cascade room at the rear end.
- Design of shell structure has been modified by providing an opening at roof to enable loading of CNG cascade. This will be closed permanently after lowering CNG cascade by 'huckbolt' arrangement.
- Part of passenger area (Differently enabled passengers area) in DPC is converted to locate CNG cascade.
- Pipelines carry CNG from cascade room to Engine room

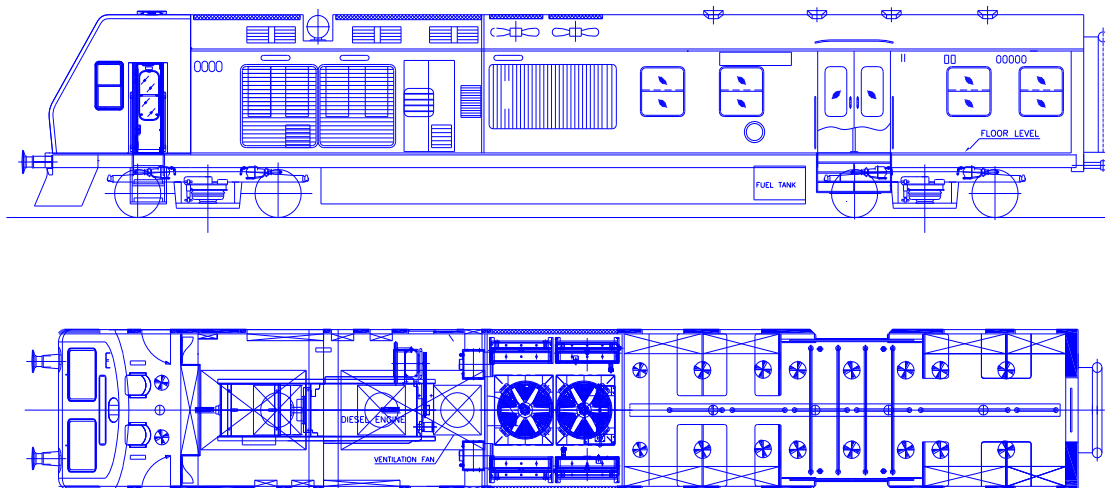
AIR- CONDITIONED 3 PHASE AC EMU with BHEL ELECTRICS

Air-conditioned 3 Phase AC EMU (with BHEL Electrics) has been designed for the first time for Western Railway. The rake will have 12 cars. The Air-conditioned EMU rake consists of one Driving Motor Coach (DMC) at each end, two non driving motor coaches (NDMC) in the middle and four trailer coaches (TC) placed in between DMC and NDMC. This will ensure through vestibule passage for 6-car unit on either side of non driving motor coaches.

Salient Features:

- All coaches including driver's cab are air-conditioned.
- All coaches are of the same class. No separate first class, ladies, handicapped and vendor compartments.
- Automatic sliding door with door control mechanism @ 4 per sidewall
- Trailer coaches have wider airtight vestibules (950mm wide) on both ends. DMC and NDMC coaches have vestibules on non-driving end.
- Polycarbonate seats and stainless steel handholds
- Stainless steel shell designed on LHB Platform.
- Underframe is made of Corten Steel.
- Sidewall sheet thickness is 3mm to specification CK 201.
- Aluminum moulded luggage racks similar to the ones provided in LHB coaches.
- Wider double-sealed windows for panoramic view.

1600 HP DEMU WITH ABB ELECTRICS



ICF turned out 1600 hp 3-phase DEMU during 2013-14 with Medha make propulsion system. It is planned to manufacture another rake of 1600 hp 3-phase DEMU with ABB propulsion system during 2014-15. While trailer coaches are common between both the rakes, DPC is different. New layout and manufacturing drawings for DPC of 1600 hp AC-AC DEMU (ABB Electrics) have been issued. Salient Features are:

- 1600 hp Cummins engine with asynchronous traction alternator from M/s.Traction System/Austria.
- On-board water-cooled traction converters and underslung heat exchanger.
- Auxiliary convertors for hotel load.
- Blended brake system with dynamic braking resistors.

STAINLESS STEEL TRAILER COACHES FOR 1400 HP DEMU

Design of stainless steel trailer coaches has been developed on LHB platform with end walls similar to the ones on 1400 HP DEMUs that are in service. This will ensure seamless interchangeability of coaches between stainless steel DEMU and corten steel DEMU. Production drawings have been issued.

LHB COACHES WITH FIAT BOGIE

ICF has adopted RCF drawings for LHB-EOG variants. In view of the difficulties experienced due to mismatching of drawings and subsequent alterations, ICF has taken up development of drawings in 3D. Drawings have been developed for LACCW, LGS, LSCN, LACCZ variants.

TECHNICAL PROPOSALS FOR EXPORT COACHES

ICF received tender enquiries for the following export projects through RITES (Expotech). Preliminary layouts and technical offers have been submitted.

- BG coaches for Sri Lanka Railway - 78 coaches of 5 variants
- MG coaches for Myanmar Railways - 117 coaches of 5 variants
- MG coaches for Bangladesh Railways - 100 coaches of 6 variants
- BG coaches for Bangladesh Railways - 50 coaches of 6 variants

DESIGN IMPROVEMENTS

IMPROVEMENTS IN MAINLINE COACHES

Swing door for Air-Conditioned Coaches



IC Door with Double acting Door

Presently, AC sleeper coaches are fitted with Inter-Communication doors (IC doors), open-able towards the inside only. During fire safety meeting held at Railway Board on 16-01-2014, a decision has been taken to develop IC doors open-able both inward and outward.

Swing door that opens both inward and outward has been developed and fitted in one SG ACCN coach for trial. Aluminium composite panel has been used as door panels

and Aluminium honeycomb as core for weight reduction. The design was sent to Railway Board and RDSO vide letter No.MD/Fur/W&D/98 dt.31/01/14. Procurement of doors for trial fitment is in progress.

IMPROVEMENTS - PANTRY CAR

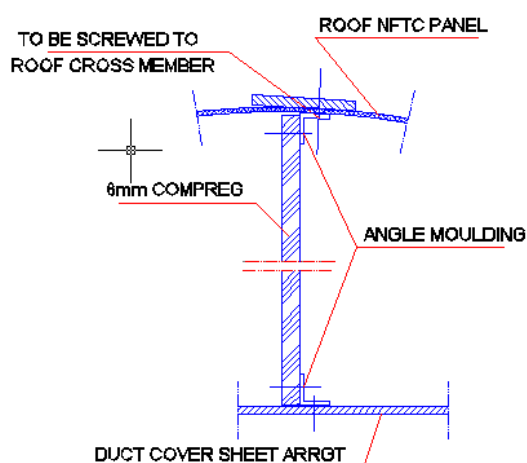
- Flooring with improved slope of 20mm and six drain holes for better water draining.
- Stainless steel tubular frame has been provided to enable easy maintenance in the place of the mesh used earlier, where there would be a heavy accumulation of oil.
- Roof assembly has been modified to keep exhaust fan blade above ceiling level to avoid splashing of oil/dust/soot at roof panel.



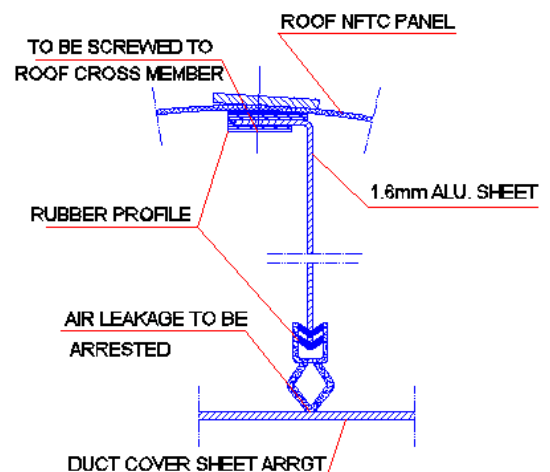
Stainless steel tubular frame

IMPROVED AIR- CONDITIONED DUCT DESIGN

Air duct baffle design has been modified by providing an aluminum panel with sealing rubber to avoid air leakage and to improve air circulation. Necessary drawings have been issued for implementation.



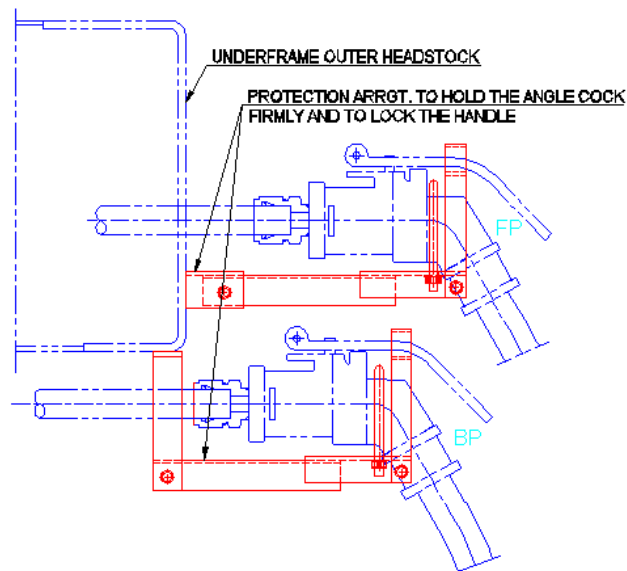
Existing Baffle plate arrangement



Modified Baffle plate arrangement

PROTECTION ARRANGEMENT FOR CUT- OFF ANGLE COCKS ON MAINLINE COACHES

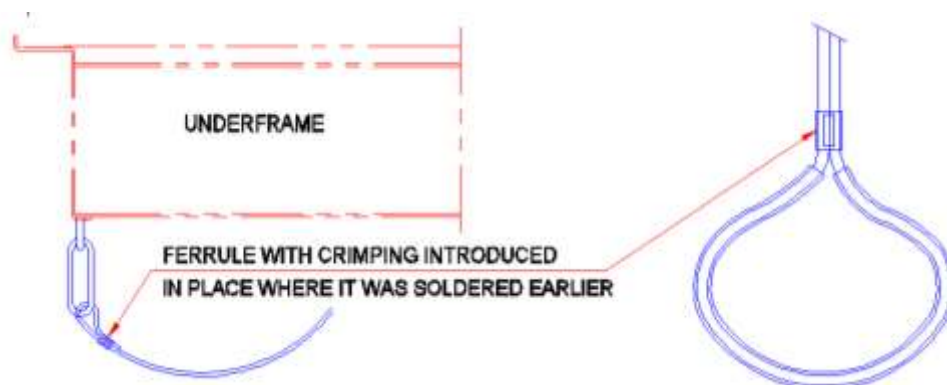
Air leakage from stainless steel joints of cut-off angle cocks has been reported by user Railways. Additional support and protection arrangement to angle cocks have been introduced. Drawing has been issued for implementation.



Protection arrangement for cut-off angle cocks

INTRODUCTION OF FERRULE CRIMPING AND SS WIRE ROPE

- ON passenger alarm system, wire rope material specification has been changed from steel to IRS-H-14-1961 grade to Stainless Steel AISI-304 grade to minimise corrosion.
- Crimping process has been introduced in place of soldering of Joints between Alarm wire rope and lever arrangement.



Ferrule with Crimping

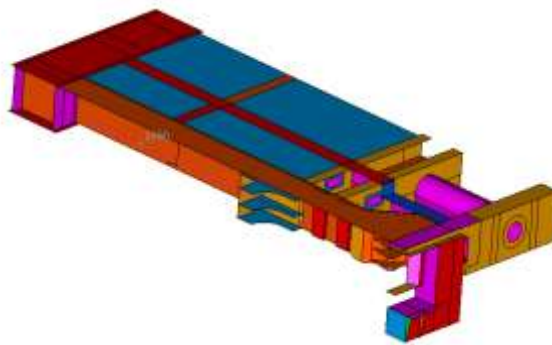
SLRD COACH – CHANGE IN SOLE BAR THICKNESS

Feedback was received from zonal railways regarding end drooping in SLRD coaches, resulting in low buffer height and cracks on sole bar. To improve strength of under frame, thickness of the sole bar has been increased from 5mm to 8mm.

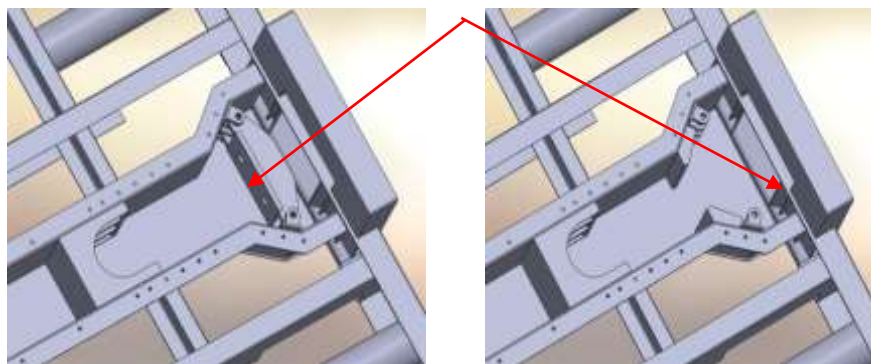
DEVELOPMENT OF UNIVERSAL HEADSTOCK

Universal Head Stock has been developed, which can be used for both Screw coupler and Centre Buffer Coupler on BG mainline coaches. Finite Element Analysis has been done on SCN shell with Universal Head Stock and suitable changes have been made to maintain the stress values within safe limits.

The design of universal head stock has been sent to RDSO for approval.



Draft Gear Bracket



Universal Head Stock- Screw Coupler type Universal Head Stock-CBC type

IMPROVEMENTS IN EMUs

POLYCARBONATE INJECTION MOULDED SEAT

Injection moulded polycarbonate seat-cum-backrest having ergonomic profile for improved passenger comfort has been developed. Uniform thickness in all areas of seat, and multi-coloured parts are the added features.

Austenitic stainless steel AISI 304 is used for structural framework for better corrosion resistance. Metallic stud inserts are embedded in polycarbonate seats for fixing with SS tubular frame structure.

These seats were provided in the two prototype rakes of MUTP phase-II EMU.



POLYCARBONATE INJECTION MOULDED HANDHOLDS

Polycarbonate injection moulded handholds with ball-and-socket rotating arrangement have been developed using CAE tools for MUTP-II project. The mounting frame is of austenitic stainless steel grade AISI 304.

Each handhold can be used by two persons and is of sturdy design. These were provided in the first two prototype rakes.



Handhold assembly

AC EMU MOTOR COACH WITH HINGED DOOR AT DRIVER'S CAB AND SLIDING DOOR AT LT ROOM:

To have better ventilation and lighting during maintenance in LT room, removable hatch door has been modified as sliding door similar to the body side sliding door. Driver's cab door design has also been modified from sliding type to hinged door.



SQUEEZE LOAD TESTING OF 3-Phase AC/EMU Motor (MUTP-II) Shell

Stress and deflection values obtained were found to be within limits.

IMPROVEMENTS IN DEMUs CATERPILLAR ENGINE FOR 1400 HP DEMU

Development order for using Caterpillar Engine on two DPCs has been issued. 100 hours type testing of Engine Model 3508B was carried out successfully at firm's premises (Hosur) jointly with RDSO. The DPCs will be made during 2014-15.

IMPROVED SHELLS FOR 1400 HP DMU/DPC:

Based on complaint from N.Rly regarding sagging and development of cracks in sole bar of DPCs running in JUC area, and as advised by Railway Board (Minutes of meeting dated 29.12.2012) the following improvements have been done:



Improved Shell

- Compressor side Sliding door has been removed; side walls are strengthened and smaller removable door has been provided.
- Three window openings in engine room were removed to increase the structural strength as it has been found that these windows are not functionally required.
- Vertical louvers are welded directly to the structure in engine room by eliminating Aluminium removable door.
- Z stiffeners have been introduced in between body pillars in place of light rails and waist rails in engine room area.
- Roof structure has been strengthened in engine room and radiator room by providing additional stiffeners and boxed carlines.

Finite Element Analysis of the revised design showed reduction in overall shell deflection from 17.5 mm to 12.5 mm. In order to validate the design modifications and results of the Finite Element Analysis, one 1400 HP DEMU/DPC shell was subjected to squeeze load test with a vertical load of maximum 76 Tons (considering 40% dynamic augment instead of 25% considered for other motor coaches) and a squeeze load of 200 Tons.



Modified DMU/DPC 1400 HP under squeeze test

Based on satisfactory squeeze test results, improved design shells have been cut-in for 1400hp DEMU DPC from Shell No.194 onwards.

STEEL NOSECONE FOR DPC

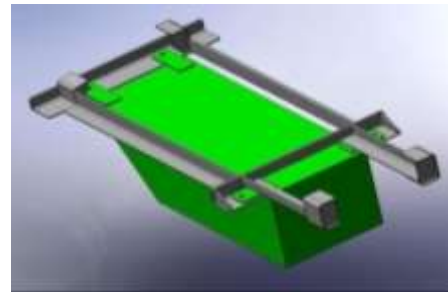
Steel nose cone for the driving end of DPC in lieu of FRP nosecone was cut in from 2012-13. The steel nosecone provides complete integration with shell structure by means of welding and is also safe against crashing forces.



A new head code bracket has been provided and modification have been done for head light bracket, doorway handrail, front ventilation opening, cover for IV coupler and ceiling brackets for conduits.

POSITIVE MOUNTING FOR FEEDER JUNCTION BOX

Mounting bracket for feeder junction box of SPART and DEMU coaches has been designed with positive mounting. Weight of feeder junction box which was directly taken by bolts in earlier arrangement is now taken on brackets. Hence loosening and breakage of bolts which may cause dropping of the feeder junction box is avoided.



IMPROVEMENTS – SPART

FRP DRIVER'S DESK

Steel desk is provided in driver's cab of SPART. To improve ergonomics and driving comfort, FRP driver's desk with a pleasing colour has been designed. This will be cut- in from 2014-15.

DESIGN VALIDATION

Finite Element Analysis has been performed for the following:

- Single-piece forged CP pin for Kolkata Metro coaches
- 300 AH Battery box for Kolkata Metro coaches.
- Traction motor Nose Suspension Bracket for 3phase AC/EMU motor coach.
- Body bolster with Centre Pivot arrangement for MUTP-II Coaches
- Traction motor Nose Suspension Bracket for 3phase 1400 hp DEMU/DPC (ABB Electronics)
- Traction Converter Mounting Frame for 3ph Air-Conditioned AC/EMU Driving Motor Coach.
- 1400 hp DMU/DPC with dual fuel (CNG) to assess strength of shell with large roof opening for loading CNG cascade.
- Pull rod for Conventional AC



Coaches for standardization.

- Bio-Toilet Mounting Brackets - Applicable for conventional coaches with Screw coupling & End lavatories.
- Bio-Toilet Mounting Brackets & Support members for DMU/TC coach.
- AWS magnets for motor coaches of 3-phase Air-conditioned AC EMU could not be provided in the existing locations due to infringement with traction motor. Hence the bogie head stock and brackets were re-designed to fit AWS magnets on the outside of head stock and FE analysis has been performed successfully.

IMPROVEMENTS – FIXTURES

(i) Universal assembly fixture -FIAT Bogie details in Hydraulic press

- Control Arm assembly
- Traction Lever assembly
- Traction Centre assembly
- Roll Link assembly
-

(ii) Assembly fixture for anti roll bar - FIAT bogie



Anti roll bar

(iii) Simple plate type fixture for assembling bio toilet retention tank bracket on under frame



Fixture

EXPORT

ICF manufactures railway passenger coaches, coach shells, bogies and coach spares for domestic as well for foreign market, besides meeting the Rolling Stock and spares requirements of Indian Railways as per the directives of Railway Board.

So far, 601 coaches, 359 bogies, 11 coach shells and a number of spares have been exported to different Afro-Asian countries.

The details of coaches/shells/bogies/spares exported by ICF up to March 2014 are furnished at Annexure – I.

EXPORT PERFORMANCE OF ICF DURING 2013-14**Quotations for Export****Myanmar Railways**

M/s. RITES had requested ICF to submit quotation for the following types of conventional coaches for Myanmar Railways.

1. Ordinary Day Coach	-	66
2. Upper Class Chair	-	12
3. Sleeper	-	12
4. Brake Van (SLR)	-	15
5. Restaurant Car	-	12

Tentative and un-vetted cost of the above five types of coaches was advised to M/s. RITES on 13-12-2013.

Bangladesh Railways

M/s. RITES had requested ICF to submit quotation for the following types of MG conventional coaches for Bangladesh Railways.

Sl. No.	Type of Coach	Qty.
1.	MG AC Sleeper Carriage	13
2.	MG AC Carriage (Chair Car)	24
3.	MG Shovan Carriage (Chair Car)	36
4.	MG Shovan Carriage (Chair Car) with Pantry & Guard Brake	13
5.	MG Composite Power Car	8
6.	MG First Class Sleeper Car	6
	Total	100

Tentative and unvetted cost of the above six types of coaches was advised to M/s. RITES.

M/s. RITES had requested ICF to submit quotation for the following types of BG conventional coaches for Bangladesh Railways.

Sl. No.	Type of Coach	Qty.
1.	BG AC Sleeper Carriage	4
2.	BG AC Carriage (Chair Car)	4
3.	BG Shovan Carriage (Chair Car)	25
4.	BG Shovan Carriage (Chair Car) with Pantry & Guard Brake	8
5.	BG Composite Power Car	5
6.	BG First Class Sleeper Car	4
	Total	50

Tentative and unvetted cost of the above six types of coaches was advised to M/s. RITES.

DOMESTIC MARKET – NON-RAILWAY

Defence Research & Development Organization

- Revised quotation for manufacture and supply of 2 Jet Deflector Crane Cars (JDCC) has been submitted to DRDO.
- Draft Agreement for manufacture and supply of 2 Jet Deflector Crane Cars has been sent to DRDO for approval.
- Quotation for manufacture and supply of 7 Integrated Communication Coaches (ICC) has been submitted to DRDO.
- Draft Agreement for manufacture and supply of 7 Integrated Communication Coaches has been sent to DRDO for approval.

Andhra Pradesh Tourism Development Corporation

- APTDC had requested ICF to submit quotation for two transview coaches for operation in the Vishakapatnam-Araku line of East Coast Railway.
- Abstract estimated cost of Transview coach sought by APTDC has been submitted by ICF, to enable APTDC to obtain sanction of funds from the Ministry of Tourism.

Ministry of Defence

Railway Board had asked ICF to submit estimated cost and delivery schedule of AC II tier and Pantry Car coaches for Ministry of Defence. Unvetted cost of AC II tier coaches has been advised to Railway Board.

ANNEXURE – I**DETAILS OF EXPORT (Up to 31.03.2014)**

Details of products exported to various countries since inception are as follows:

SL.NO	YEAR	TYPE	NO. OF STOCK EXPORTED			COUNTRY	COST (` Lakhs)
			BOGIES	SHELL S	COACHES		
1	1967-68	MG BOGIES	2			THAILAND	0.47
2	1969-70	MG BOGIES	45			THAILAND	9.18
3	1967-68	MG BOGIES	66			BURMA	16.50
4	1975-76	MG BOGIES	2			BURMA	1.22
5	1969-70	CG BOGIES	100			TAIWAN	21.00
6	1971-72	CG COACHES			113	TAIWAN	398.96
7	1974-75	CG BOGIES	32			TAIWAN	22.77
8	1978-79	CG BOGIES	64			TAIWAN	63.23
9	1978-79	CG BOGIES	48			TAIWAN	53.76
10	1973-74	CG COACHES			6	ZAMBIA	14.81
11	1975-76	CG COACHES			30	PHILIPPINES	224.88
12	1978-79	CG COACHES			30	PHILIPPINES	289.60
13	1976-77	MG COACHES			17	TANZANIA	196.64
14	1978-79	MG COACHES			20	UGANDA	263.21
15	1979-80	MG COACHES			50	VIETNAM	548.15
16	1982-83	CG COACHES			32	NIGERIA	293.86
17	1984-85	MG COACHES			9	BANGLADES	120.60
18	1986-88	MG COACHES			61	BANGLADES	880.51
19	1984-85	CG COACHES			15	MOZAMBIQ	148.80
20	1994-95	MG COACHES			15	VIETNAM	783.20
21	1997-98	MG COACHES			27	TANZANIA	2314.30
22	2004-05	MG SHELLS		11		MALAYSIA	348.97
23	2006-07	CG COACHES			24	ANGOLA	1766.00
24	2007-08	CG COACHES			32	ANGOLA	3821.00
25	2010-11	BG COACHES			30	SRI LANKA	2743.19
26	2011-12	BG COACHES			60	SRI LANKA	6583.65
27	2012-13	BG COACHES			30	SRI LANKA	3291.83
		TOTAL	359	11	601		25220.29
		SPARES					461.50
		GRAND TOTAL					25681.79

INDUSTRIAL SAFETY

Occupational Health & Safety Management System

During 2013-14, External Certification Audit on Integrated Management System (IMS) comprising the following was conducted successfully and audit reports were analyzed to close the observations:

- Occupational Health & Safety Management System (OHSAS) to BS 18001:2007,
- Quality Management System (QMS) to ISO 9001:2008 and
- Environmental Management System (EMS) to ISO 14001:2004

The certification is valid up to 06.08.2016.

Accident Statistics and Man-days lost

Accident Statistics

Division	No. of Accidents (2012-2013)	No. of Accidents (2013-2014)	% Reduction
Shell Division	52	22	57.69%
Fur. Division	19	12	36.84%

Reduction in Man-days lost

Division	Man-days lost (2012-2013)	Man-days lost (2013-2014)	% of reduction of Man- days lost
Shell Division	1458 days	707 days	51.50 %
Fur. Division	820 days	329 days	59.87 %

STEPS TAKEN TOWARDS INDUSTRIAL SAFETY

- a) Investigation and Analysis of all accidents and on site studies for suggestions and remedial measures.
- b) Arranging Safety awareness materials like Safety Posters, Safety Stickers, Safety Slogans, etc to create Safety awareness amongst Employees.
- c) Conducting Plant Safety Inspections to identify the unsafe condition and unsafe act and to suggest the remedial measures.
- d) Weekly Safety Review Meetings are conducted every week on Thursday in the presence of all managers concerned with officers and senior supervisors. In that forum Unsafe Acts & Conditions, Safety-related issues, follow up of Safety issues including accidents, near miss incidents, fire incidents and first aid injury are being discussed through PowerPoint presentations. In this meeting 190 safety points were raised

during 2013-14 out of which 118 points have been completed and 72 points are in progress.

- e) Monthly Apex Level Safety Review Meetings are conducted every month (Second Friday) in the presence of CME (on behalf of GM), Principal HOD's, HOD's, Managers, Chief Safety officers and Safety officers. In that forum important safety issues, accidents/incidents, Safety inspection points are discussed in detail and reviewed every month. In this meeting 162 safety points were raised during 2013-14 out of which 126 points have been completed and 36 points are in progress.
- f) Headquarters Safety Committee Meetings comprising equal participation from employees' representatives (staff council members) and management are being conducted once in three months and various safety issues are discussed in the meeting and the progress/action taken on the points is being reviewed in every meeting.

SAFETY TRAINING PROGRAMME.

The following safety training was imparted during 2013-14 to employees, supervisors, Act Apprentices and contract employees at Technical Training Centre:

- Fire-fighting Training along with fire drills was imparted to 318 employees and First Aid Training was given to 416 employees.
- Training classes on Disaster Management Programme were given to 111 employees.
- Training classes on "Environment Hazards safety statutory requirements" were imparted to 58 employees of five batches.
- 'Induction safety awareness' training was given to all Act Apprentices.
- Training classes on "Accident prevention" in Supervisory Development Programme" were given to 150 supervisors.
- Training classes on 'Safety in Maintenance' programme for Millwright Employees were given for 15 employees.
- 'Safety in working with Hydraulic Press' was given to 20 employees.
- "Precaution in working with EOT crane Maintenance work" was given to 15 contract employees and other new inducted employees.
- Safety awareness programme for contract employees in association with "KARAM" Industries (manufacture of Safety gears) was given to 110 employees.
- 'Safety in Material Handling' training was given to 30 employees.

CONTRACT EMPLOYEES SAFETY

- All contract employees are issued entry permit by single window system duly ensuring employee compensation insurance.
- All employees are counseled for observing safety and any violation by contract employees is being fined.
- Separate safety awareness programme conducted for contract employees every year.
- Work permit system like Hot work permit, Height work permit, excavation permit and electrical shutdown procedure was strictly followed for execution of contract work.

OTHER IMPORTANT ACTIVITIES

- Monitoring of Periodical Eye Examination for FLT Drivers, Crane Drivers, Serangs, Loco Pilots, Shunting Masters and Pointsmen.
- Monitoring of Periodical Medical Examination for Canteen Staff, Loco Pilots, Shunting Masters and Pointsmen.
- Monitoring Periodical Medical Examination for Employees involved in shot Blasting.
- Framing of Specifications and Technical Scrutiny of Personal Protective Equipment (PPE) and Safety Items.
- Co-ordination with Directorate of Industrial safety and Health / Pollution Control Board (PCB) for comply the statutory requirements.
- Co-ordination with Labour commissioner for comply the Contact labour (Regulation & Abolition) Act, 1970..
- Renewal of Consent order for Air and Water every year, through Tamilnadu Pollution Control Board.
- Obtaining Hazardous Wastes Authorisation every 5 years from Tamilnadu Pollution Control Board.
- Preparation and issue of Legal Register duly covering various Environment-related Acts & Rules which are applicable to ICF and revising the same whenever any amendment is issued.
- Preparation and issue of On-Site Emergency Plan (OSEP) duly covering various emergencies such as Fire, Leakage of Gas, Handling & Storage of Chemicals, etc
- Counselling of employees towards Safety Rules and Regulations and to promote the usage of PPE.
- Celebrating National Safety Day (4th March), Fire Service Week (14 - 20 April) and Environment Day (5th June) every year by taking Safety Pledge, Green Pledge, and display of banners, etc.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment (PPE) is procured in sufficient quantity and stocked to meet the requirements. The following PPE is issued to employees periodically.

Gloves

Leather gloves, Special gloves for painters, Special gloves for welders (under trial), Special gloves for electrical applications, Special gloves for Acid & chemical handling.

Safety shoes

General purpose, electrical safety shoes, Hot zone shoes, Ladies safety shoes, Separate shoes for FLT Drivers & Riveters (Engineering), Gum boots and Separate Safety shoes for officers.

Uniform

Full sleeve for welders and half sleeve for other trades, Blue cotton saree for women employees + overcoat for women employees, Khaki uniform for FLT drivers, White overcoat for CMT staff.

Other Safety Gear

In addition to the above-mentioned PPE, the following safety gear is provided to the employees:

- Leather hand sleeve
- Leg guard
- Leather apron and canvas apron
- Polycarbonate goggles
- Face shield for grinder
- Hand shield for welders
- Leather cap for fitters
- Earplug and Earmuff
- Safety helmet and helmet for visitors
- Nose mask for welders and fitters
- Organic vapour nose mask for painters
- Safety belt for Civil Engineering Staff working at height

CHAPTER VII

PROJECTS

Progress under Plan Head - 42 [Workshop Including Production Unit]

Highest ever booking of expenditure was achieved under PH-42 during the year 2013-14. Against Revised Budget Grant of `69 crore actual expenditure to the tune of `86.28 crore was booked during the year resulting in **125.03% utilization**.

Physical progress is higher than financial progress. (In the case of M&P only 70% fund was released and in the case of civil & electrical works, contract bills were paid only on accumulation of work done for `2 crore and `1 crore respectively)

Values in ` Thousands

Allocation	Budget Grant	Revised Grant	Expenditure during 13-14	Percentage of Fund Utilisation
CAP	783401	683391	848511	124.16 %
DRF	11001	6681	14367	215.04 %
TOTAL	794402	690072	862818	125.03%

Progress under Plan Head - 41 [Machinery & Plant Programme]

Similarly in Plan Head-41, **141.85 % fund utilization** was achieved.

Values ` in Thousands

Allocation	Budget Grant	Revised Grant	Expenditure during 13-14	Percentage of Fund Utilisation
CAP	32852	18700	28392	151.83 %
DRF	152907	143240	201319	140.55 %
TOTAL	185759	161940	229711	141.85%

The following projects were closed during the year and completion reports are under process.

Values in ` Crores

Item No of Pink book 13-14	Description of Project	Sanctioned cost	Financial Progress ##	Physical Progress
8	Augmentation / Upgradation of facility for MRVC Electric Multiple Units	56.07	75.70%	100%
11	Augmentation of capacity for manufacturing of 1500 coaches per annum	77.92	84.5%	100%
	Total	133.99		

- Financial progress is less than physical progress on account of dropping of some items on review.

Performance of machines commissioned during 2013-14

Plan Head	No. of machines received	No. of machines commissioned	No. of machines for which PTCs issued
PH-41	8	11	15
PH-42	22	16	16
Total	30	27	31

Consequent upon review of M&P requirement in PH-41 & PH-42,

A gross saving of `93.81 crore was achieved by dropping the following M&P from procurement plan:

Plan Head - 41

S.No.	Description of Work	Value in ` crores
1.	CNC Lap Cutter	2.81
2.	Coil Spring End grinding machine	10.00
	Total	12.81

Plan Head - 42

S.No.	Description of Work	Value in ` crores
1.	Dropping of Spring line Project	81.00
	Total	81.00

Projects in Progress:**Name of the project:**

Modernization and expansion of ICF to manufacture technologically upgraded coaches with increased production capacity from 1500 coaches to 1700 coaches per year

Status:

- i) Production in Fiat Bogie shop commenced during the year. Two coach sets of **Fiat Bogies (4 Nos.)** were manufactured during the year. All machines of Fiat Bogie shop have been commissioned. Further production is expected to pick up once the flow of raw material starts.
- ii) Master plan of LHB shop area was prepared. As a result concreting of area surrounding LHB shop was dropped where, in future, three bays are proposed to be commissioned resulting in a saving of **`1.81 crore**.
- iii) The area requiring machining on Fiat bogie was reviewed and in consultation with design wing superfluous machining was eliminated resulting in saving of 40 minutes per Fiat bogie frame
- iv) All the machines in LHB shed are covered by 2 years warranty and followed by AMC of 3 years in case of M&P procured through COFMOW for LHB shell manufacturing shop and 5 years AMC for M&P procured through RITES for FIAT bogie shop.

Financial status

Values in ` Crores

Sanctioned Cost	Expenditure 2012-13	RG for 2013-14	Expenditure During 2013-14	Cumulative Expenditure up to 2013-14
252.04	41.10	65.00	77.26	118.36

Important events during 2013-14

Visits of VIPs to LHB Unit

- MM visited the site on : 10.01.2014
- AM (ME) visited the site on : 28.03.2014
- Member (Elect) visited the site on : 28.03.2014
- CRB visited the site on: 31.03.2014

Other Events

- First FIAT bogie assembled in-house on 09.01.2014
- First bogie frame assembled & welded in-house on 24.02.2014
- First Bogie bolster assembled & welded in-house on 23.04.2014
- 28 Bogies frames machined on the 5-axis machining centre
- 12 Bogie bolsters machined on Bolster machining centre



5-axis Bogie frame machining centre
(CRB's visit)



Static Bogie Load testing Machine
(MM's visit)



Bogie bolster machining centre
(AM(ME)'s visit)



FIAT Bogie Cpl. (assembled in-house)
(ML's visit)

Other Projects

- a) Revised Estimate for **1700 coach project** is ready and will be submitted to Finance shortly.
- b) Estimated cost of **Complete Switchover project** has been brought down to `298 crore and will be sent to FA&CAO shortly.

Other Major M&P Commissioned in Shell Division



STORES

GENERAL

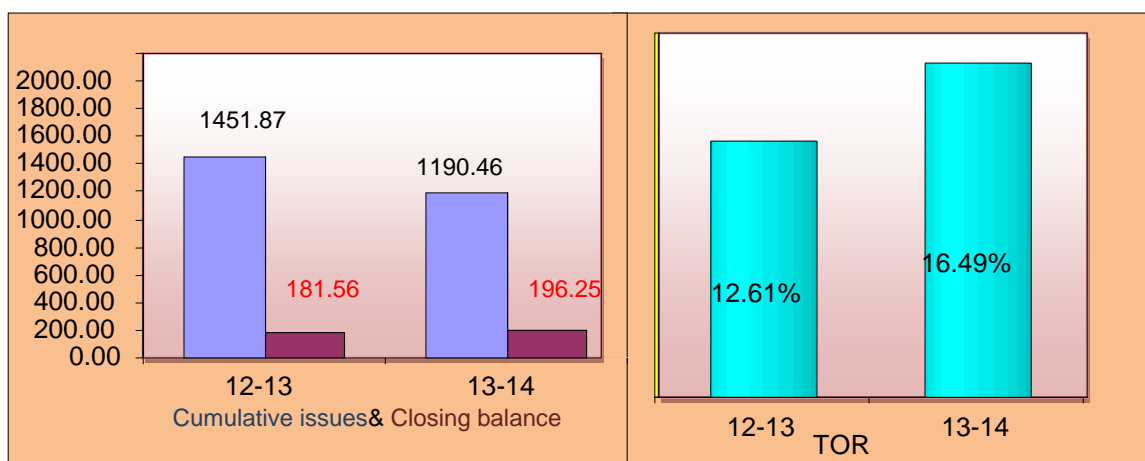
The year 2013-14 has been a land mark in the history of ICF achieving all time high production of 1622 coaches. The target was achieved due to outsourcing of large no. of items to trade and that stores department took upon the responsibility of arranging materials timely by taking special efforts and close co-ordination with the vendors. This was possible with systematic efforts and co-ordination at all levels by ensuring 100% availability of material well within time.

Materials Management in a Production Unit throws much tougher challenges to any Materials Manager to fulfill the need to ensure 100% availability of all required items for production & at the same time meeting challenges to control expenditure under given budgetary provisions in spite of drastic variations in Production Programme which resulted in higher inventory balances. Stores department of ICF has successfully met the challenges of ICF production over the years. ICF has envisaged in the production of a wide range of coach types of specialised builds. The stiff challenges were efficiently dealt with by proper and timely review of requirement by maintaining the flow of material for production on one side and to avoid accumulation of inventory on the other.

This was achieved by adopting latest concepts like

- Regular interaction with suppliers and consuming departments towards effective supply chain management.
- New Purchase Module has been developed in-house to replace the age old legacy system, maintenance of which was an issue. The entire system was developed and implemented in a short span of one year. New Purchase Module has seamless interface with the ERP System.
- ICF has switched over to 100 % e-auction from June 2013 onwards. Payment of BSV / EMD through RTGS facility is envisaged.
- 100% allotment of unified PL for A& B category items and achieved 98.41% for Stock items

The Gross Issue Value under Stores Suspense was Rs.1190.46 Crores (2013-14) as against 1451.87 Crores in 2012-2013. The Stores Suspense closing balance of Rs.196.25 Crores as on 31st March 2014 was higher than last year balance of Rs.183.13 Crores as on 31st March 2013 due to drastic changes in production Programme of LHB Coaches, Kolkatta Metro Coaches and AC EMUs affecting inventory. The Inventory Turn Over ratio as on 31st March 2014 was 16.49% as compared to 12.61% on 31st March, 2013..

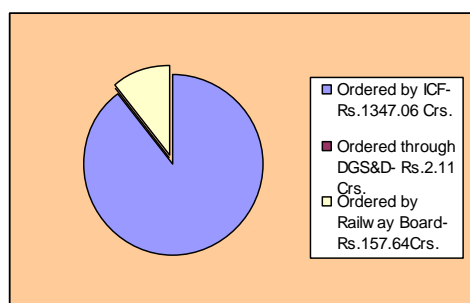


VALUE OF RAILWAY EQUIPMENT AND STORES ORDERED.

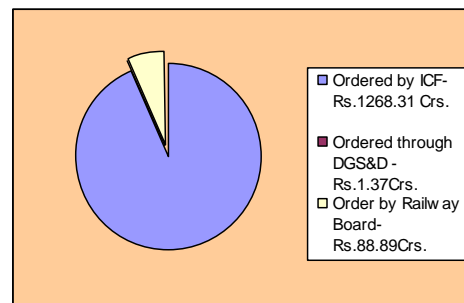
The value of Railway Equipment and Stores ordered during 2013-14 as compared to 2012-13 through various agencies is as follows:

(Value in Crores of Rupees)

Sl.No.	Particulars	2012-13	2013-14
1	Value of Equipments and Stores Ordered through Department of Supply	2.11	1.37
2	Value of Equipments and Stores ordered through Railway Board	157.64	88.89
3	a) Value of Equipments and Stores ordered direct by ICF		
	a) Through Import	1.11	1.84
	b) Imported Stores purchased in India	0.00	0.00
	c) Indigenous Stores	1347.06	1176.21
	Total Value of Stores and Equipments ordered	1507.82	1268.31



Total value of Railway Equipments & Stores ordered during 2012-13 was Rs 1507.82 crores



Total value of Railway Equipments & Stores ordered during 2013-14 was Rs.1268.31 crores

PURCHASES FROM COTTAGE AND SMALL SCALE INDUSTRIES:

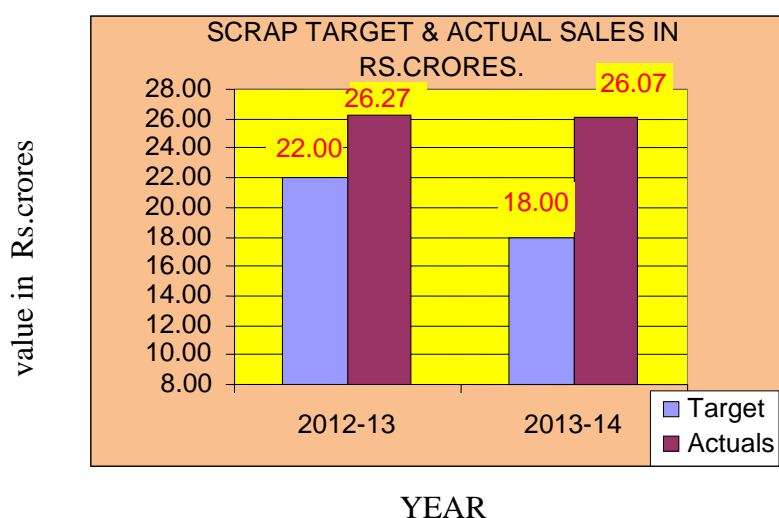
The value of stores purchased (receipts) from Cottage and Small Scale Industries during the year 2013-14 was Rs.324.52 crores as against Rs. 357.88 crores during 2012-13.

USE OF KHADI:

The requirement of KHADI items in ICF in the year 2013-14 is Rs.12,37,559/- as against Rs. 7,12,020/- during 2012-13.

SCRAP SALES:

The Total Value of Scrap sold was Rs.26.07 crores in 2013-14 against the target of Rs.18.00 crores and sale of scrap in the 2012-13 was Rs. 26.27 Crs.



MATERIAL SUPPLY POSITION:

CORTEN & MILD STEEL-SHEETS & PLATES:

These items are centrally procured by Railway Board, for which indents have been submitted. Supply position of Corten & Mild Steel Sheets & Plates during the year 2013-14 was satisfactory and smooth supply of these raw materials was ensured for the production requirements through ICF purchases also, if required.

WHEELS AND AXLE:

Wheels and Axles are supplied by RWF/Bangalore and SAIL/Durgapur Steel Plant. Wheel sets are also received from RWF/Bangalore to achieve production target. Cast wheels and Axles for motor & Trailer coaches for EMU trains have been received from RWF regularly. Wheels and Axles are imported for LHB coaches. The supply position of WTA items are generally satisfactory by regular follow up with suppliers and Railway Board.

DISPOSAL OF NON-MOVING AND SURPLUS ITEMS:

The frequent changes in production programme and changes in design reflected badly on increasing the value of these items during this year. The value of Non-Moving items over 24 months as on 31-03-2014 was Rs.509.07 lakhs. The value of items not moved for more than 12 months but less than 24 months as on 31.3.2014 was Rs.1253.42 lakhs. The items pertaining to LHB coaches will be utilized during the production of LHB coaches in the ensuing year. Items like Airspring has been spared to other railways and similar possibilities are being explored to reduce inventory.

STORES BALANCE:

OPENING BALANCE AT THE BEGINNING OF THE YEAR 2013-14:

(In Crores of

Rupees)

S.No	Details	Crores
1	Physical Stores Balance without Adjustment of Cap.P.7160	289.06
2	Adjustment to Cap.P-7160 (i.e. P-7170 to P-7190)	(-) 1.80
3	Outstanding Suspense Cap.P-7110, 7120, 7130, 7140	(-) 104.13
	Total Stores Balance from Cap.P-7110 to P-7190	183.13

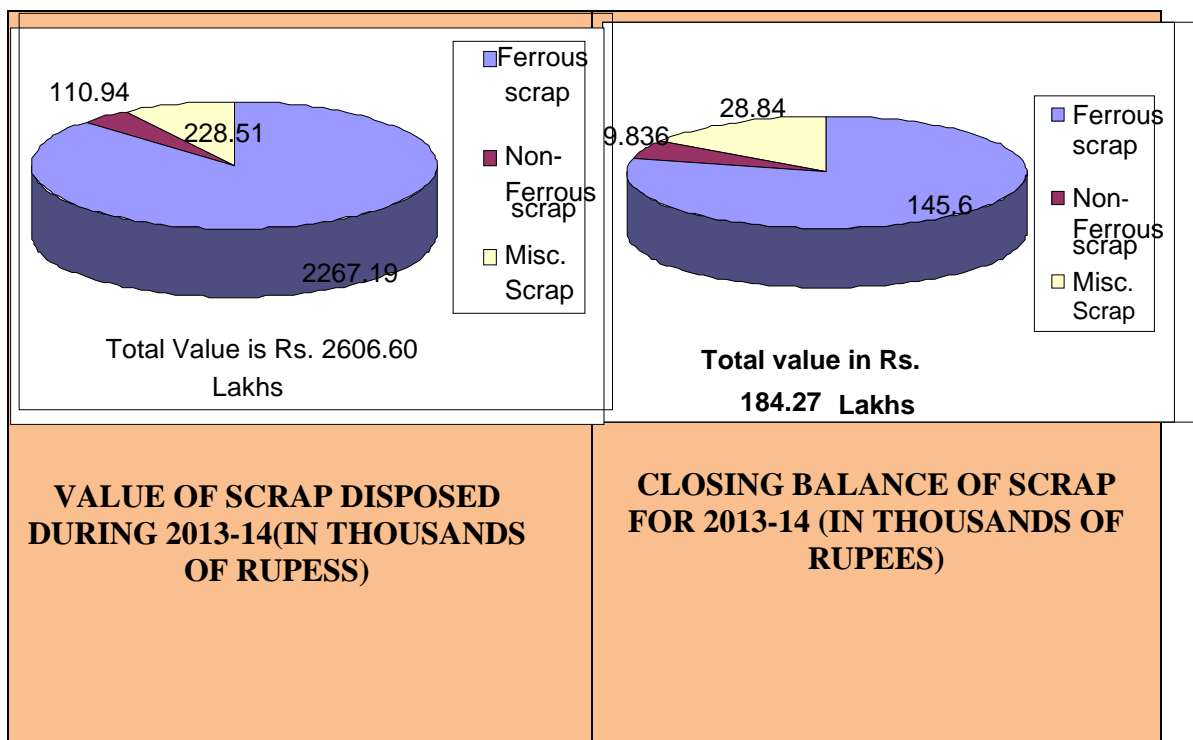
TRANSACTION OF PHYSICAL STORES CAP. P-7160 DURING THE YEAR 2013--14 & CLOSING BALANCE AT THE END OF THE YEAR 2013-14.

S.No	Details	Crores
1	Receipts	1268.98
2	Issues	1219.91
3	Physical Stores Balance w/o adjustment Cap.P-7160	338.14
4	Adjustment to Cap.P-7160 (i.e P-7170 to P-7190)	(-) 7.39
5	Outstanding Suspense Cap.P.7110, 7120, 7130, 7140	(-)134.50
6	Total Stores Balance from Cap.P-7110 to P-7190	196.25

SCRAP (ARISING AND DISPOSAL) for 2013-14

(Value in Lakhs)

Sl.No	CATEGORY	OB as on 1.4.13		Receipts during the year 13-14		Disposal/ Issues during the year 13-14		CB as on 31.3.14	
		Qty MTs	Value	Qty MTs	Value	Qty MTs	Value	Qty MTs	Value
1	Ferrous Scrap including Rails.	141.5	35.79	9308.01	2376.89	8879.52	2267.18	570.0	145.6
2	Non-Ferrous Scrap.	9.24	13.34	74.39	107.43	76.82	110.94	6.81	9.83
3	Misc.Scrap	1163.65	241.79	74.87	15.55	1099.72	228.51	138.79	28.84
	Total	1314.39	290.93	9457.27	2499.97	10056.06	2606.6	715.60	184.27

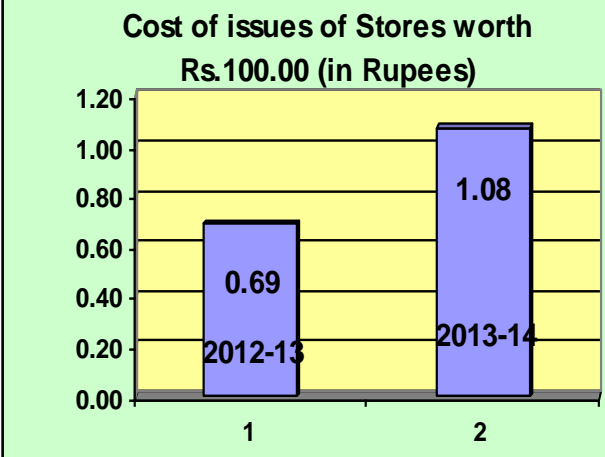


STORES DEPOT EFFICIENCY IN RESPECT OF STOCK VERIFICATION.

Year	% of items verified with no discrepancy	% of items verified with discrepancy			
		Items upto the limit Rs.50/-	Items of Rs. 50/- to Rs.100/-	Items of Rs.100/- to Rs. 1000/-	Items above the limit of Rs.1000 /-
2012-13	98.67	1.01	0.00	0.04	0.27
2013-14	99.72	0.10	0.00	0.00	0.19

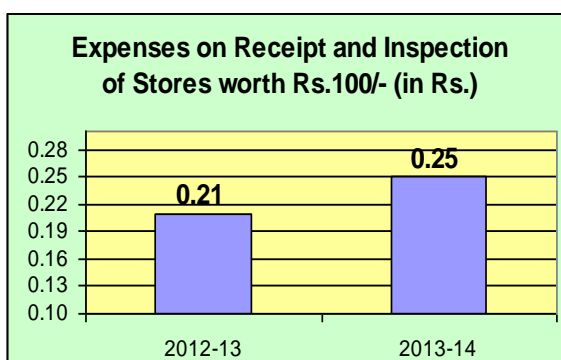
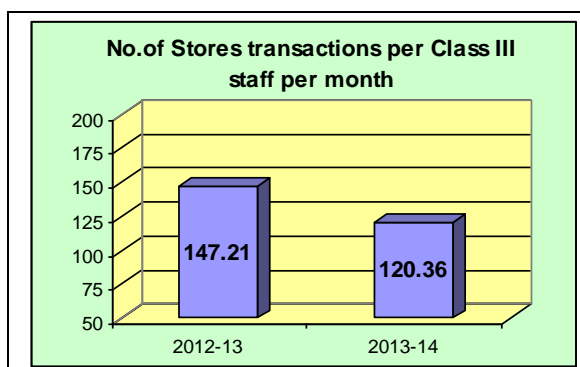
STATEMENT SHOWING THE UNIT COST OF ISSUES.

The unit cost of issues is furnished below:

Year	Value of stores issued during the year (Rs.in crores)	Pay& Allowance of Depot Staff. (Rs.in crores)	Cost of making issue of stores worth Rs. 100/-	Cost of issues of Stores worth Rs.100.00 (in Rupees) 
2012-13	1480.66	10.22	0.69	
2013-14	1219	13.20	1.08	

STORES TRANSACTIONS.

Year	Total no. of transaction during the year.			Average transaction per month	No.of CL-III staff	Average no. of transaction per CL-III staff per month.
	No. of Receipts	Nos. of Issues	Total Nos.			
2012-13	20848	185785	182013	16193	110	147.21
2013-14	15323	136344	151667	12638	105	120.36



RECEIPT AND INSPECTION OF STORES.

Year	Expenditure on officers & staff on receipt & inspection works (Rs. in crores)	No. of staff for clerical & supervisory work.	Aprox. value of stores received (Rs. in crores)	Cost of receipt & inspection for every Rs.100/- worth of stores. (in Rs.)	Receipt note granted per receipt clerk per month . (in Nos.)
2012-13	1.62	71	1516.22	0.21	231
2013-14	3.27	44	1268.98	0.25	252

SUPPLY POSITION OF UNIFORMS

Year	Qty demanded for year 2013	Qty issued for year 2013	Compliance
Boiler Suits	21400 Nos	21400 Nos	100%
Big Towels	13253 Nos	13253 Nos	100%

* * *

ANNEXURE – A.
STATEMENT OF VALUE OF STORES PURCHASED DURING THE PERIOD
FROM 1.4.2013 TO 31.3.2014.

(Amount in Thousands of Rs).

Sl no	Class of Stores	Total for 2012-13	Directly Imported for 2013-14	Imported stores purchased in India for 2013-14	Indigenous Cottage, Public Sec. Inds & others for 2013-14	For the year 2013-14
1.	Bridge Works its parts, Fittings and special fastenings.	0	0	0	0	0
2.	Engineering plant & components including pneumatic machinery & Tools.	0	0	0	0	0
3.	Workshop Machinery, Plant & equipment including Pneumatic Machinery and Tools.	77119	336	0	117774	118110
4.	Permanent way material and Track Tools.	0	0	0	9651	9651
5.	Rolling Stock parts and fittings only (excluding Elec. equipment & Materials)	11184171	18094	0	8973562	8991656
6.	Building materials, Water main, Sewage system and track & Yard enclosing materials, signal & interlocking materials.	373	0	0	199	199
7.	Small tools, Hardware tools, hard wares, copper, tin, zinc ware, leather, canvas, metal, painting stores, timber, rubber, electrodes fuel oil, furniture etc	2047473	6	0	1536250	1536256
8.	Electric fittings, wireless equipments, electric traction equipments, telegraph & telephone equipments.	1301784	0	0	1598284	1598284
9.	Rolling stock, locomotives of all types, wagon, coaches including electric multiple units complete & others.	0	0	0	0	0
10.	All other stores.	467331	7	0	428992	428999
	TOTAL	15078251	18443	0	12664712	12683155

ACCOUNTS & FINANCE

CHAPTER IX

STATEMENT SHOWING CAPITAL AT CHARGE AS AT THE END OF 31.03.2014(Fig. in Lakhs of Rupees)		
FIXED ASSETS	CAPITAL	CAPITAL FUND
a)projects:		
i) Township	146.93	0
ii) workshop & office	877.53	0
	1024.46	0
b) Additions :		
i)Township	2717.76	3.66
ii) Workshop & Office	42175.44	591.38
Total Additions :	44893.20	595.04
TOTAL FIXED ASSETS (1(a) + (b))	45917.66	595.04
<u>FLOATING ASSETS :</u>		
<u>Stores Suspense</u>		
i) Stores in Stock	33813.82	
ii) Stock Adjustment Account	-738.88	
iii) Stores in Transit	0.29	
iv) Other Stores Suspense Heads	-13450.00	
	19625.23	
<u>Manufacture Suspense</u>		
i) Work in Progress	15678.26	
ii) Labour Suspense	-5837.75	
	9840.51	
<u>Miscellaneous Advance Capital:</u>	1057.18	
TOTAL FLOATING ASSETS (II(a)+(b)+ (c))	30522.92	
GRAND TOTAL	76440.58	595.04

**STATEMENT SHOWING THE BREAK-UP OF FIXED ASSETS AND ADDITIONAL
EXPENDITURE INCURED ON WORKS FOR THE YEAR ENDING 2013-14**
[Rupees in Lakhs]

Sl. no	Name of the Work/Scheme	Capital		Capital Fund		Grand Total
		Township	Workshop	Township	Workshop	
		[From Inception upto 93-94 and from 01-02]		From 94-95 to 00-01		
I.	<u>Fixed Assets:</u>					
1	LAND	18.39	11.93	0	0	30.32
2	ROAD	5.63	11.00	0	0	16.63
3	BUILDING	76.65	252.39	0	0	329.04
4	WATER WORKS	12.32	4.36	0	0	16.68
5	MACHINERY	0	292.34	0	0	292.34
6	ELECTRICAL INSTALLATION	6.99	91.79	0	0	98.78
7	GENERAL CHARGES	15.89	90.48	0	0	106.37
8	OTHER CHARGES	11.06	123.24	0	0	134.30
	Total - Fixed Assets	146.93	877.53	0	0	1024.46

**EXPENDITURE BOOKED ON PROJECT ACCOUNT DISTRIBUTED OVER
TOWNSHIP & WORKSHOP UP TO THE END OF 2013-2014**

B R E A K - U P	Capital	Capital Fund			Grand Total
T O W N S H I P	2864.69	3.66			2868.35
W O R K S H O P	43052.95	591.38			43644.33
T O T A L	45917.64	595.04			46512.68

DEPRECIATION RESERVE FUND BALANCE

The Opening Balance of the Depreciation Reserve Fund on 01.04.2013., was Rs. (-)18143.40 lakhs. The Fund received on accretion of Rs.1800.00 lakhs during the year 2013-2014. A sum of Rs.2759.64 lakhs was withdrawn from the fund towards the procurement of Machinery and Plant on Replacement Account. The interest for the year 2013-2014 amount to Rs.(-)931.16 Lakhs.The balance at the end of the preceeding years and current year are shown below.

Year	Amount	Year	Amount	Year	Amount
1956-57	15.57	1980-81	1501.60	2004-05	-6260.43
1957-58	33.15	1981-82	1610.22	2005-06	-6541.80
1958-59	63.98	1982-83	1682.57	2006-07	-7696.69
1959-60	91.81	1983-84	1663.83	2007-08	-8768.32
1960-61	115.62	1984-85	1743.51	2008-09	-10406.56
1961-62	187.27	1985-86	1745.91	2009-10	-12236.6
1962-63	224.47	1986-87	1802.90	2010-11	-14298.4
1963-64	317.33	1987-88	1821.43	2011-12	-15588.2
1964-65	356.68	1988-89	743.29	2012-13	-18143.4
1965-66	407.79	1989-90	-1835.71	2013-14	-20034.2
1966-67	406.75	1990-91	-3415.50		
1967-68	520.39	1991-92	-3928.13		
1968-69	583.46	1992-93	-4807.42		
1969-70	649.18	1993-94	-5175.43		
1970-71	713.09	1994-95	-5165.04		
1971-72	782.80	1995-96	-5453.73		
1972-73	839.56	1996-97	-5426.45		
1973-74	895.75	1997-98	-5564.07		
1974-75	977.55	1998-99	-5677.31		
1975-76	1043.43	1999-00	-5872.00		
1976-77	1129.31	2000-01	-6270.31		
1977-78	1232.27	2001-02	-6199.64		
1978-79	1324.19	2002-03	-6066.26		
1979-80	1404.70	2003-04	-6103.01		

Estimated Cost of Shells - 2013-14			
S.NO.	TYPE	No.of Shells turned out in 2013-14	Estimated Cost per Shell
1	AC EMU B	3	5800
2	AC DC EMU B MRVC	3	6700
3	DEMU DPC HHP	27	7500
4	SPART DPC 1	15	7900
5	SPART DPC 2	15	7900
6	AC DC EMU C MRVC	3	6100
7	AC DC EMU D MRVC	2	6200
8	AC DC EMU D/HC MRVC	1	6000
9	DEMU TC HHP (GEN)	46	5600
10	DEMU TC HHP (VEN)	24	5600
11	DEMU TC HHP (GEN) HALDIA	24	5600
12	DEMU TC HHP (VEN) HALDIA	12	5600
13	SPART TC	15	6700
14	ACCW LHB	7	9000
15	GS LHB	4	7200
16	SCN LHB	15	7800
17	FACCW	16	5800
18	FACCW CBC	2	6200
19	ACCW	130	5900
20	ACCN	87	6300
21	FAC	10	5700
22	SCZ AC	20	5800
23	SCZ AC JS	5	6000
24	SCN	621	5200
25	GS	260	5000
26	CB	15	5200
27	SCZ	85	4800
28	SCZ JS	25	5000
29	SLRD	133	5000
	TOTAL	1625	

Estimated Cost of FURNISHING - 2013-14			
Sl.No.	Type	No.of Coaches	Estimated (Figs in thousands of Rs.)
1	AC DC EMU B MRVC	3	49200
2	DEMU DPC HHP	20	31000
3	SPART DPC 1	11	30800
4	SPART DPC 2	11	30800
5	AC DC EMU C MRVC	3	5800
6	AC DC EMU D MRVC	2	5900
7	AC DC EMU D/HC MRVC	1	5700
8	DEMU TC HHP (GEN)	48	3900
9	DEMU TC HHP (VEN)	24	3900
10	DEMU TC HHP (GEN) HALDIA	11	1900
11	DEMU TC HHP (VEN) HALDIA	7	1900
12	SPART TC	11	8600
13	ACCW LHB	10	16000
14	SCN LHB	15	8700
15	FACCW	16	11600
16	FACCW CBC	4	12200
17	ACCW	122	13000
18	ACCN	81	14500
19	FAC	6	12000
20	SCZ AC	14	11000
21	SCZ AC JS	5	12100
22	SCN	614	4200
23	GS	304	3700
24	CB	15	5000
25	SCZ	85	3900
26	SCZ JS	25	4500
27	SR JS	2	4600
28	SLRD	140	3600
	Total	1610	

Break-up of Provisional Transfer Price of Shells - 2013-14

(Figs in thousands of Rs.)

Sl. NO.	TYPE	No. of Shells turned out in 2013-14	Direct Labour & incentive	Direct Stores	Over heads	Total Mfg cost	Proforma Charges	Total Cost including
1	AC EMU B	3	580	3480	1740	5800	29	5829
2	AC DC EMU B MRVC	3	670	4020	2010	6700	34	6734
3	DEMU DPC HHP	27	750	4500	2250	7500	38	7538
4	SPART DPC 1	15	790	4740	2370	7900	40	7940
5	SPART DPC 2	15	790	4740	2370	7900	40	7940
6	AC DC EMU C MRVC	3	610	3965	1525	6100	31	6131
7	AC DC EMU D MRVC	2	620	4030	1550	6200	31	6231
8	AC DC EMU D/HC MRVC	1	600	3900	1500	6000	30	6030
9	DEMU TC HHP (GEN)	46	560	3640	1400	5600	28	5628
10	DEMU TC HHP (VEN)	24	560	3640	1400	5600	28	5628
11	DEMU TC HHP (GEN) HALDIA	24	560	3640	1400	5600	28	5628
12	DEMU TC HHP (VEN) HALDIA	12	560	3640	1400	5600	28	5628
13	SPART TC	15	670	4355	1675	6700	34	6734
14	ACCW LHB	7	1350	4950	2700	9000	45	9045
15	GS LHB	4	1080	3960	2160	7200	36	7236
16	SCN LHB	15	1170	4290	2340	7800	39	7839
17	FACCW	16	870	3190	1740	5800	29	5829
18	FACCW CBC	2	930	3410	1860	6200	31	6231
19	ACCW	130	885	3245	1770	5900	30	5930
20	ACCN	87	945	3465	1890	6300	32	6332
21	FAC	10	855	3135	1710	5700	29	5729
22	SCZ AC	20	870	3190	1740	5800	29	5829
23	SCZ AC JS	5	900	3300	1800	6000	30	6030
24	SCN	621	780	2860	1560	5200	26	5226
25	GS	260	750	2750	1500	5000	25	5025
26	CB	15	780	2860	1560	5200	26	5226
27	SCZ	85	720	2640	1440	4800	24	4824
28	SCZ JS	25	750	2750	1500	5000	25	5025
29	SLRD	133	750	2750	1500	5000	25	5025
	RSP TOTAL	1625						

Break-up of Provisional Transfer Price of furnishing of coaches - 2013-14
(Figs in thousands of Rs.)

SL.N O	TYPE	No. of Coaches turned out in 2013-14	Direct Labour & Incentive	Direct Stores	Overheads	Total Mfg. Cost	Proforma Charges	Total Cost including Proforma Charges
1	AC DC EMU B MRVC	3	2460	41820	4920	49200	397	49597
2	DEMU DPC HHP	20	1550	26350	3100	31000	306	31306
3	SPART DPC 1	11	1540	26180	3080	30800	305	31105
4	SPART DPC 2	11	1540	26180	3080	30800	305	31105
5	AC DC EMU C MRVC	3	580	4060	1160	5800	180	5980
6	AC DC EMU D MRVC	2	590	4130	1180	5900	181	6081
7	AC DC EMU D/HC MRVC	1	570	3990	1140	5700	180	5880
8	DEMU TC HHP (GEN)	48	390	2730	780	3900	171	4071
9	DEMU TC HHP (VEN)	24	390	2730	780	3900	171	4071
10	DEMU TC HHP (GEN) HALDIA	11	190	1330	380	1900	161	2061
11	DEMU TC HHP (VEN) HALDIA	7	190	1330	380	1900	161	2061
12	SPART TC	11	860	6020	1720	8600	194	8794
13	ACCW LHB	10	2400	8800	4800	16000	231	16231
14	SCN LHB	15	1305	4785	2610	8700	195	8895
15	FACCW	16	1740	6380	3480	11600	209	11809
16	FACCW CBC	4	1830	6710	3660	12200	212	12412
17	ACCW	122	1950	7150	3900	13000	216	13216
18	ACCN	81	2175	7975	4350	14500	224	14724
19	FAC	6	1800	6600	3600	12000	211	12211
20	SCZ AC	14	1650	6050	3300	11000	206	11206
21	SCZ AC JS	5	1815	6655	3630	12100	212	12312
22	SCN	614	630	2100	1470	4200	172	4372
23	GS	304	555	1850	1295	3700	170	3870
24	CB	15	750	2500	1750	5000	176	5176
25	SCZ	85	585	1950	1365	3900	171	4071
26	SCZ JS	25	675	2250	1575	4500	174	4674
27	SR JS	2	690	2300	1610	4600	174	4774
28	SLRD	140	540	1800	1260	3600	169	3769
	Total	1610						

STATEMENT OF OUT-TURN DURING THE YEAR 2013-14 – SHELLS
(figures in thousands of Rs.)

Sl.No.	Type	No.of Shells turned out in 2013-14	Estimated Cost per Shell as per	Total Estimated Cost	Approximate Cost of Manufacture
1	AC EMU B	3	5800	17400	24234
2	AC DC EMU B MRVC	3	6700	20100	24822
3	DEMU DPC HHP	27	7500	202500	236088
4	SPART DPC 1	15	7900	118500	130995
5	SPART DPC 2	15	7900	118500	140760
6	AC DC EMU C MRVC	3	6100	18300	21981
7	AC DC EMU D MRVC	2	6200	12400	15820
8	AC DC EMU D/HC MRVC	1	6000	6000	7691
9	DEMU TC HHP (GEN)	46	5600	257600	302266
10	DEMU TC HHP (VEN)	24	5600	134400	150120
11	DEMU TC HHP (GEN) HALDIA	24	5600	134400	154344
12	DEMU TC HHP (VEN) HALDIA	12	5600	67200	74880
13	SPART TC	15	6700	100500	100200
14	ACCW LHB	7	9000	63000	87031
15	GS LHB	4	7200	28800	34744
16	SCN LHB	15	7800	117000	141390
17	FACCW	16	5800	92800	106992
18	FACCW CBC	2	6200	12400	13374
19	ACCW	130	5900	767000	794040
20	ACCN	87	6300	548100	622572
21	FAC	10	5700	57000	65960
22	SCZ AC	20	5800	116000	106900
23	SCZ AC JS	5	6000	30000	32550
24	SCN	621	5200	3229200	3445308
25	GS	260	5000	1300000	1432860
26	CB	15	5200	78000	82890
27	SCZ	85	4800	408000	452200
28	SCZ JS	25	5000	125000	117275
29	SLRD	133	5000	665000	894691
	Total	1625		8845100	9814978

Sl.No.	Type	No.of Coaches turned out in 2013-14 (Board RSP)	Estimated Cost per Coach as per Final Grant	Total Estimated Cost (Col.iii * iv)	Approximate Cost of Manufacture
1	AC DC EMU B MRVC	3	49200	147600	155730
2	DEMU DPC HHP	20	31000	620000	711820
3	SPART DPC 1	11	30800	338800	656326
4	SPART DPC 2	11	30800	338800	70334
5	AC DC EMU C MRVC	3	5800	17400	16863
6	AC DC EMU D MRVC	2	5900	11800	19982
7	AC DC EMU D/HC MRVC	1	5700	5700	7163
8	DEMU TC HHP (GEN)	48	3900	187200	202128
9	DEMU TC HHP (VEN)	24	3900	93600	96096
10	DEMU TC HHP (GEN) HALDIA	11	1900	20900	23683
11	DEMU TC HHP (VEN) HALDIA	7	1900	13300	15071
12	SPART TC	11	8600	94600	74008
13	ACCW LHB	10	16000	160000	130600
14	SCN LHB	15	8700	130500	91455
15	FACCW	16	11600	185600	206496
16	FACCW CBC	4	12200	48800	51624
17	ACCW	122	13000	1586000	1437770
18	ACCN	81	14500	1174500	927774
19	FAC	6	12000	72000	75546
20	SCZ AC	14	11000	154000	149926
21	SCZ AC JS	5	12100	60500	60940
22	SCN	614	4200	2578800	2557310
23	GS	304	3700	1124800	1021136
24	CB	15	5000	75000	81780
25	SCZ	85	3900	331500	284410
26	SCZ JS	25	4500	112500	102600
27	SR JS	2	4600	9200	7666
28	SLRD	140	3600	504000	472360
	Total	1610		10197400	9708597

STATEMENT OF OUT-TURN DURING THE YEAR 2013-14 –COACHES FURNISHING COST (figures in thousands of Rs.)					
Sl.No.	Type	Manufacturing Cost (Approx.)	Dividend ***	Share of Cost of Rly.Board	Total
1	AC EMU B	8078	0	40	8118
2	AC DC EMU B MRVC	8274	0	41	8315
3	DEMU DPC HHP	8744	0	44	8788
4	SPART DPC 1	8733	0	44	8777
5	SPART DPC 2	9384	0	47	9431
6	AC DC EMU C MRVC	7327	0	37	7364
7	AC DC EMU D MRVC	7910	0	40	7950
8	AC DC EMU D/HC MRVC	7691	0	38	7729
9	DEMU TC HHP (GEN)	6571	0	33	6604
10	DEMU TC HHP (VEN)	6255	0	31	6286
11	DEMU TC HHP (GEN) HALDIA	6431	0	32	6463
12	DEMU TC HHP (VEN) HALDIA	6240	0	31	6271
13	SPART TC	6680	0	33	6713
14	ACCW LHB	12433	0	62	12495
15	GS LHB	8686	0	43	8729
16	SCN LHB	9426	0	47	9473
17	FACCW	6687	0	33	6720
18	FACCW CBC CRW	6687	0	33	6720
19	ACCW	6108	0	31	6139
20	ACCN	7156	0	36	7192
21	FAC	6596	0	33	6629
22	SCZ AC	5345	0	27	5372
23	SCZ AC JS	6510	0	33	6543
24	SCN	5548	0	28	5576
25	GS	5511	0	28	5539
26	CB	5526	0	28	5554
27	SCZ	5320	0	27	5347
28	SCZ JS	4691	0	23	4714
29	SLRD	6727	0	34	6761

**Average Cost per Coach (Furnishing Cost) inclusive of Dividend, Share of Cost of Railway Board, DRA etc.
for the year 2013-14
(figures in thousands of Rs.)**

Sl.No.	Type	Manufacturing Cost	Dividend & Govt. Cont. to NPS	Share of Cost of Rly.Board	Total
1	AC DC EMU B MRVC	51910	151	260	52321
2	DEMU DPC HHP	35591	151	178	35920
3	SPART DPC 1	59666	151	298	60115
4	SPART DPC 2	6394	151	32	6577
5	AC DC EMU C MRVC	5621	151	28	5800
6	AC DC EMU D MRVC	9991	151	50	10192
7	AC DC EMU D/HC MRVC	7163	151	36	7350
8	DEMU TC HHP (GEN)	4211	151	21	4383
9	DEMU TC HHP (VEN)	4004	151	20	4175
10	DEMU TC HHP (GEN) HALDIA	2153	151	11	2315
11	DEMU TC HHP (VEN) HALDIA	2153	151	11	2315
12	SPART TC	6728	151	34	6913
13	ACCW LHB	13060	151	65	13276
14	SCN LHB	6097	151	30	6278
15	FACCW	12906	151	65	13122
16	FACCW CBC CRW	12906	151	65	13122
17	ACCW	11785	151	59	11995
18	ACCN	11454	151	57	11662
19	FAC	12591	151	63	12805
20	SCZ AC	10709	151	54	10914
21	SCZ AC JS	12188	151	61	12400
22	SCN	4165	151	21	4337
23	GS	3359	151	17	3527
24	CB	5452	151	27	5630
25	SCZ	3346	151	17	3514
26	SCZ JS	4104	151	21	4276
27	SR JS	3833	151	19	4003
28	SLRD	3374	151	17	3542

Actual Cost of Shells manufactured from 1955-56 to 2012-13 (figures in thousands of Rs.)					
Year	No.of Shells turned out	Actual Cost	Year	No.of Shells turned out	Actual Cost
1955-56	12	2400	1985-86	812	535935
1956-57	88	15555	1986-87	788	602992
1957-58	222	26973	1987-88	820	735477
1958-59	381	35196	1988-89	875	790416
1959-60	447	36935	1989-90	948	985667
1960-61	583	48725	1990-91	962	1082425
1961-62	598	42902	1991-92	1017	1287219
1962-63	600	46674	1992-93	1037	1629961
1963-64	605	52467	1993-94	1012	1916538
1964-65	632	53498	1994-95	789	1636760
1965-66	640	60142	1995-96	764	1724066
1966-67	634	64252	1996-97	962	2158980
1967-68	642	66556	1997-98	943	2176660
1968-69	640	70831	1998-99	1055	2599453
1969-70	649	77011	1999-2000	1019	3017780
1970-71	660	88388	2000-01	1006	2821330
1971-72	557	80783	2001-02	1054	3087136
1972-73	665	115999	2002-03	954	2773403
1973-74	750	146430	2003-04	1060	3169983
1974-75	554	133346	2004-05	1085	3448945
1975-76	518	156660	2005-06	1147	4060362
1976-77	572	163145	2006-07	1205	4350615
1977-78	644	185585	2007-08	1230	4955837
1978-79	700	195870	2008-09	998	4667181
1979-80	662	206379	2009-10	1351	7229714
1980-81	714	265504	2010-11	1461	7713931
1981-82	680	286721	2011-12	1432	7654813
1982-83	766	363762	2012-13	1602	8114766
1983-84	786	408546			
1984-85	809	458247			

Actual Cost of Coaches manufactured from 1955-56 to 2012-13 (figures in thousands of Rs.)					
Year	No.of Coaches turned out	Actual Cost	Year	No.of Coaches turned out	Actual Cost
1957-58	74 *	5620	1985-86	806	440697
1958-59	171	10980	1986-87	795	505210
1959-60	249	12681	1987-88	793	450279
1960-61	194	11287	1988-89	897	841050
1961-62	240	19701	1989-90	925	898273
1962-63	372	26851	1990-91	956	748152
1963-64	352	22957	1991-92	1009	1016479
1964-65	666	32914	1992-93	1023	1257940
1965-66	558	45145	1993-94	1038	1486858
1966-67	539	74002	1994-95	775	1594852
1967-68	700	103107	1995-96	779	2133520
1968-69	635	90668	1996-97	999	2289836
1969-70	668	88108	1997-98	967	2148651
1970-71	635	93308	1998-99	1057	2866563
1971-72	522	73436	1999-2000	1006	3054108
1972-73	705	111603	2000-01	1000	2788046
1973-74	744	141753	2001-02	1021	2647718
1974-75	549	141884	2002-03	923	3493402
1975-76	508	112913	2003-04	1062	3047187
1976-77	558	140949	2004-05	1116	3505355
1977-78	671	174507	2005-06	1156	3857350
1978-79	702	191668	2006-07	1201	4441950
1979-80	662	212564	2007-08	1222	5739129
1980-81	720	267577	2008-09	1008	7052100
1981-82	690	306917	2009-10	1290	9310824
1982-83	767	338607	2010-11	1404	9474668
1983-84	813	354282	2011-12	1432	10708342
1984-85	793	346346	2012-13	1620	12328534

ELECTRICAL PRODUCTION & MAINTENANCE

HIGHLIGHTS IN PRODUCTION:

The coach despatch details of various coaches are tabulated below and compared with previous year:

Sl.No	Type of coaches	Apr-13 to Mar-14	Apr-12 to Mar-13
1	Self Propelled Coaches	223	523
2	AC Coaches	262	236
3	EOG LHB Coaches	9	14
4	Conventional coaches	1171	850
	Total	1665	1623

PROVISION OF LED LIGHTS:

LED based Night light	243 AC Coaches
LED based side light	271 AC 1171 Conventional
LED Based tail light	127 SLR Coaches

PROVISION OF ERRUS:

25kW ERRUs	133 AC
4.5 kW ERRUs	603 Conventional

PROVISION OF MOBILE CHARGES:

2 nos. of DC mobile chargers at both gangways in lavatory side wall provided in 492 conventional GS coaches, 100 VA inverter AC mobile charging provided in 124 SCN coaches. Thereafter, provision of 100 VA inverter has been stopped in view of revised instructions to provide only DC, mobile/laptop charging sockets.



PROVISION OF BLDC FANS:

BLDC fans were provided in 765 conventional coaches.

PROVISION OF EMERGENCY LIGHT:

Emergency lights provided in 1168 conventional coaches , emergency light testing push button provided in 1150 conventional GS, SCN, SDC & SLR coaches.

PROVISION OF ECO-FRIENDLY RMPU:

Eco-friendly R 407 C refrigerant RMPU provided in 259 AC coaches.

PROVISION OF 2 X 650 AH BATTERY SYSTEM:

2 x 650 AH battery system provided in 46 ACCW coaches.



PROVISION OF LAVATORY LIGHT FITTINGS:

- a. Lavatory light fittings of 1 x 11 W in place of ordinary incandescent lamps provided in 1033 conventional GS, SCN, SDC, SDC/JS & WCB
- b. 1 x 13 W CFL type mirror light fittings in lieu of incandescent lamps provided in 949 conventional SCN & SDC.

PROVISION OF POLYCARBONATE DIFFUSER:

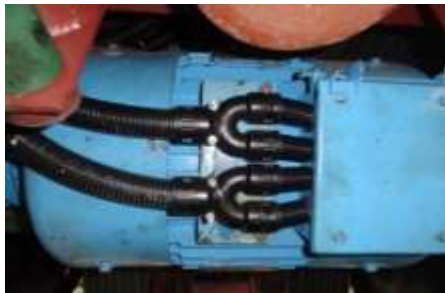
Polycarbonate diffuser type FL fitting in lieu of mesh type FL fitting provided in 409 conventional SCN coaches.



‘Y’ type connector with PMI conduits is used to connect the cables to the alternator terminals instead of old RVH type conduits & Cleat arrangement provided in 108 AC coaches.



Old Cleat provision



New‘Y’ Connector type provision

Carrying out Bogie earthing out to avoid any Electric Shock in coach – provided in 2 SPART AMRV Coaches



ELECTRICAL BUDGET FOR THE YEAR 2013-14:

1

Budget projection for 2013-14	...	218.00 crores
Actual	...	249.75 crores

INNOVATIONS AND IMPROVEMENTS:

To ensure fire prevention method, the released empty cable drums generated from Shop 39 have been stacked in a separate area earmarked as collection point in front of shop 39.



In AC coaches, new type (STANDARD make) of 63A pre-cooling selector switch is provided in lieu of old type (SALZER make) switch due to frequent breaking of switch handle.



Old 63A selector switch



New 63A Selector switch

In 119 AC coaches five-switch inverter selector switch box was introduced which includes 63A pre-cooling selector switch also, in place of four-switch inverter selector switch box.



Old inverter selector switch box



New inverter selector switch box

In **30** AC Coaches Pre crimped harness has been introduced in roof with wire and ferrule connectors in lieu of tosha connectors.



In One WCB coach fan rib provided, so that the fan blades go inside the duct for about 25 mm and increased the exhaust efficiency.



In Shop-36, 7th Line new generation test arrangement for AC coaches was made in the pit with the help of Engineering, Electrical maintenance & Millwright departments for meeting



AC coach production target.

1. Cable securing system supplied by Roxtec, on sample basis has been provided in ACCN 99 in the power panel area as well as inverter panel area, as shown in figures below.



Old Power Panel Area cable entry



Cable entry at power with securing arrangement



Old Inverter Display panel cable entry



Cable Entry at inverter display panel
With Securing Arrangement

In AC Coaches, all cubicle areas like AC control Panel, inverter panel and power panel, MS plate with cable entry hole, both from underframe and roof, was provided to avoid entry of rats and other insects in the cubicles, as a safety measure.



One set of harness for AC 2-tier has been made with PMI conduit and crimped one side at shop 39 and laid in ACCW 1073.



OG ACCW (LACCW-12) coach was flagged off by Member Mechanical (Railway Board) Shri. Alok Johari on 10.01.2014.



Self covered FDBs were provided in conventional coaches to avoid entry of foreign body into the FDB and in turn avoid short-circuit. Also, FDB inspection doors were provided in angular frame for the same purpose.



SELF-PROPELLED COACHES:

- i. In one AC EMU Motor Coach louver has been provided on the hatch door to improve the ventilation for the LT compartment. This coach has been dispatched to SER.



Hatch door without louver



Hatch door with louver

- ii. For MUTP rake, cable harnessing insertion work has been carried out by Shop 39 staff on war footing basis for 12 coaches and this facilitated to carry out the roof work smoothly in first rake of MUTP.
- iii. Production of first FAC with double RMPU has started for the first time, duly taking modified design into consideration.
- iv. Two middle basic units and two end basic units of first prototype rake of MUTP Phase-II project was handed over to M/s BT for commissioning.



MUTP-II :



Rake 1:

All Production works completed. All 4 Basic Units commissioning test completed independently. 12 car formation commissioning test completed.



Rake 2:

First prototype MUTP 12 car rake was flagged off by GM/ICF and CMD/MRVC and dispatched to Western Railway.



Motor coach



Trailer coach

One 8 car EDEMU rake dispatched to Northern Railway.

CRB, during his visit to ICF, Chennai on 31/03/2014, flagged off **1 DEMU Rake, 1 FAC** with 2 RMPU and **1 LHB AC 2 Tier**.



SCRAP DISPOSAL:

1. Unusable 4.5 kW regulators of wt. 1020kgs. were sent as scrap to Stores through 1539 on 30.04.2013. The same has been vetted by accounts department on 25.04.2013.



2. 8800 kgs. of thick and 5700 kgs. of thin copper cable off cuts generated in Shop-35,28 & Shop-39 were returned to scrap ward thro 1539 form..
3. 850 Kgs of Aluminium pipe offcuts and 710 Kgs of Aluminium boring metal generated in Shop 39 were returned to Scrap Ward.
4. 87.35 tons of Zero Value scrap was disposed.

NON-MOVING ITEM :

The non moving items issued by Electrical/Planning for use in coaches during the year 2013-14 are tabulated below:

Sl. No.	U.L.No	Description	Qty	Amount (Rs.)
1	39 3094 1295 2201	50 sq mm e-beam cable blue	641 m	357678
2	39 3094 1489 2201	1.5 sq mm e beam chocolate	12000 m	25200
3	39 3094 1507 2201	1.5 sq mm white e beam cable	3437 m	92799
4	39 3094 1544 2201	10 sq mm green e beam cable	920 m	68080
5	35 4109 7087 0101	FRLT insulation tape	250 m	17250
6	35 4109 7051 0101	Red Colour tape	250 m	15750
7	39 4007 6684 2201	PVC copper cable 1.5 sq mm	5867 m	52803
8	39 3094 7224 0101	Alternator junction box	107 no.	66857
9	39 4007 6751 2201	10 sq mm PVC insulated Cu cable	2672 m	144288
10	35 4231 9584 2201	Rigid PVC conduit 25 mm	2000 m	33460
11	39 4297 0118 0101	Old circular box 3 way	324 m	7144
TOTAL				881309

Copper Pipe 16 dia, Brass flare nut 3/8" and Hand shut off valve were spare to Carriage Works Perumbur, amounting to Rs.80576 by pricing format no. PM/E/Fur/ELEC/016.

Nonmoving LHB Hybrid AC coach Trays of 75mm & 150mm width were utilized in LACCW coaches for wiring in roof.



COMPLETION OF PRODUCTION ORDER REPORTS:

Reports received	...	88
Reports completed	...	88

QUALITY IMPROVEMENT:-

- i. Meeting was held with battery suppliers on 4.4.13 to discuss customer complaints and supply performance. The suppliers have been briefed about the following recurring nature of complaints with regards to batteries.
 - a) Specific gravity not improving
 - b) Reverse Polarity
 - c) Terminal damage
 - d) Container crack
 - e) Loss of Electrolyte
 - f) Low IR value
- ii. Meeting was held with Alternators/RRU/ERRU suppliers on 5.4.13 and following repeated complaints with regard to Alternators/RRU/ERRU were discussed.
 - a) No output / no Generation
 - b) Low output
 - c) Field wire loose
 - d) Power diode short / Open
 - e) Voltage setting not working
 - f) Voltage not building up
 - g) Voltage not Standard
 - h) UVC Card burnt
- iii. Design office has conducted meeting chaired by CDE/Elec. with fan suppliers in order to reduce the defects, poor quality and also to get their feedback to improve the UL description.
- iv. Design office has conducted meeting chaired by CDE/Elec. with Power Panel suppliers to develop power panel with 5KVA capacity so as to introduce berths reading light cum charging sockets in AC-II, AC-I, since it is required new power panel design and development. Suppliers were advised to develop prototype samples. Suppliers were also advised to develop power panel with double door arrangement so as to avoid panel work in the Furnishing.

VENDOR DEVELOPMENT

For the first time, “Buyer Seller meet” was organized at ICF on 25/4/13 which was addressed by CEE & CDE/E. Power Point Presentation was given on “Key features and advantages of IGBT & Vendor development in this area”. This would help in development of new vendors.

DRAWING ALTERATIONS:

J&K DPC coach:

- i. Cage clamp type terminals provided in endwall terminal board in place of Tosha terminal blocks.
- ii. Endwall terminal board assembly shifted from LHS to RHS to avoid changing of roof RMPU trough design. Because of shifting of endwall terminal board now **TL cable(smaller dia)** will cross the RMPU trough area which can be accommodated in the existing trough eliminating use of bigger dia **jumper**.
- iii. Driving end wall power coupler plug & plug junction box (JB2) socket junction box deleted.

- iv. For IR DEMU & DEMU JK DPC: General arrangement : Alteration done for updation of shop floor requirements and include the pre-wired engine coolant heating panel. At present, this panel is manufactured and assembled in Furnishing duly procuring all components of panel. Pre-wired panel will ensure faster coach wiring and efficient manpower utilization.\
- v. In pump control panel box, 24A&40A Rotary switches made sunk in within the box dimension to avoid infringement of panel door. Model number added for 3 makes of wago/phoenix/weidmuller for cage clamp terminals.
- vi. RMHU scheme revised in line with specification.

DEMU/JK TC-2

- i. Arrangement of electrical cubicle altered to rearrange the equipment locations for easy access during maintenance.

J&K DEMU TC 3:

- i. Non-alarm end power coupler plug added from JB1
- ii. Bogie to earth cable added in harness chart.

DEMU DPC & TC Coaches:

- I. Location of the fan switches were raised in passenger compartment of DEMU DPC, TC, accordingly harness length was reduced and drawings alteration issued.
- ii. Harness chart for roof, auxiliary control drawing revised and issued for pre-wired driver's desk. TL conduit routing shifted from control cubicle to desk. It will result in reduction in TB's in control panel by 30 Nos (95 to 65nos) hence reduction in congestion in control panel as well as cable length requirement of 19 core reduced by 5m.
- iii. Cab air-conditioning harness deleted from the drawings since ICF is not providing the air-conditioner in the cab as well as there has been change in the layout of the cab and it is very difficult to provide the air-conditioner inside the cab by the Railways because of space constraint. Hence, it was not safe to keep the redundant wiring inside the coach.
- iv. Drawing altered to implement 110V DC LED Spot light in the cab area. It has resulted in removal of 100 VA inverter which was previously required for converting DC to AC supply for using 110 V AC spot light.

700 HP DEMU

End wall TLTB +ve, -ve segregation-harness drawing for 700 HP DEMU was revised and issued to SCR based on their request for the segregation of +ve and –ve cables.

Kolkata Metro:

Blocking diode box drawing revised incorporating features of better heat dissipation, revised snubber circuit location to avoid damage due to heating and revised mounting bracket to avoid any infringement.

MRVC Phase I

Drawing altered to update the specification for fire extinguisher as per Mech. Interface

MRVC Phase II

DTC:

- i. Drgs altered due to revision of BT DTC schemes.
- ii. 21 drawings for DTC and Motor coach were altered and issued as per BT change package.

MRVC: C Trailer, D/HC, DTC:

- i. TB, Train light wiring, harness drawings altered
- ii. MRVC/C,D,D/HC, M/BT: Underframe Drawings altered from prototype to series production.

MRVC/M/BT :

- i. HT room tray arrangement drawings of MRVC/BT motor coaches revised as per prototype requirements duly reducing the thickness from 2mm to 1.6mm resulting in weight reduction.
- ii. In motor coaches, Arrgt.of HT compartment, shunting cab, electrical equipments above roof and driver's cab (DTC), are altered after completion of prototype manufacturing.
- iii. Layout of switch installation, earthing arrangement of train line conduits, train line conduit arrangement, cable tray arrangement and harness details for L&F drawings updated as per prototype rakes of MUTP II western railway coaches of "C" TRAILER and NDTC coaches.
- iv. Alterations carried out in line with BT revised schematics for Motor coaches, D-HC coaches, C-Trailer coaches and DTCs.
- v. Underframe arrangement drawings updated for series production after prototype manufacturing.

- vi. Roof wiring arrangement and its detail drawings updated for M, C, D& D/HC coaches.
- vii. Drawing of baby compressor mounting modified since its enclosure was infringing with the side wall which would have resulted in maintenance difficulty. Also, a cut-away provided on the partition wall, for tightening of 02 no. foundation bolts. b) Width of the clamps holding L&F tray increased for easy installation.

ARTV/SV/DPC & ARMV AC coaches:

- i. Switch installation drawings issued deleting redundant fittings.
- ii. Water raising motor push button location relocated from underframe to cubicle for ease of operation.

SV DPC:

- i. Coach load on indication lamp added.
- ii. Feeder control power scheme, control circuit scheme, wiring diagram for control TB drawings revised as per latest approved SAN drawing.
- iii. Block diagram all harness chart drawings revised in line with arrangement drawing.
- iv. Harness chart for roof drawing revised in line with arrgt. drawing and harness length revised as per shop follow-up.

ARTV

Harness chart for roof drawing revised in line with arrangement drawing and harness length revised resulting in the saving of cables.

ARMV:

Roof wiring arrangement

- i. FL fitting 1 no. deleted in Store room & Doctor's room since excess
- ii. 1 no. fan deleted in Doctor's room due to infringement with berth suspension bracket and adjacent one more fan available.

Underframe:

4 nos. of 50 dia conduit arrangement provided for feeder cable in underframe arrangement and cable junction box provided for cable terminating area in order to protect cables against rat biting, dust, dirt etc.

Power Panel:

- i. Cable gland entry holes provided in both top and bottom cover of panel, insulator bars provided for neutral terminal, twin stud terminal added for 25 sq.mm cable. Cable gland will ensure protection against rat biting, dust, dirt etc.

- ii. Earth fault in ARMV AC was causing shut down of propulsion system in ARTV/DPC-SV and stoppage of train in mid section. Hence earth leakage relay added in ARMV schematics of ARMV coach, which will isolate ARMV coach in case of earth fault and ARTV, DPC/SP auxiliary supply will not be affected which was causing shut down of propulsion system. Accordingly, schematic drawing for roof wiring and wiring diagram for power panel altered.

Non-AC coaches:

- Universal 110 V DC mobile charger (110V DC) socket with LED indication suitable for all types of chargers introduced and accordingly switch installation drawing issued.
- Panel, hinge and panel key materials changed to stainless steel to avoid corrosion.
- VRLA batteries & metallic trays included in the drawing
- Crimping socket data revised for under-frame harness chart drawings to suit modified rotary switch panel.
- Schematic, wiring diagrams and harness chart altered to introduce laptop cum mobile charging sockets in non AC sleeper coaches and mobile charging sockets in GS coaches @ 2 nos per doorway near lavatory.
- Arrangement of underframe wiring and pipe arrangement – Drawing revised by changing material of cable junction boxes and battery charging socket from MS to SS to avoid heavy and frequent corrosion problems being faced by zonal railways.
- RDSO has issued guideline for incorporating mobile phone charging socket. To implement the same in second class day coach (SDC) electrical cubicle arrangement drawings revised.
- Roof schematic, wiring diagram and harness drawings revised for colour coding of e-beam cable and shifting of PAIL terminal to rotary switch panel.
- Mirror Light fitting drawing revised based on feed back from manufacturers. Schematic diagram added in name plate itself and shifted from acrylic cover to top frame. CFL holder insulating material polybutylene phthalate glass fiber (PBT GF) added.
- 400mm, 450mm crashworthy fan guard drawing has been modified by changing grade of SS spiral wire to SS 304 & and providing manufacturing tolerance in mesh guard which was fixed at 70 mm to 75±3mm.
- Underframe junction box terminal link material is changed from aluminium to copper, since ICF is using copper cables and will prevent bimetallic corrosion.

Fuse distribution box FRP SMC moulding(in compartment) & FRP SMC fuse distribution box (in doorway):

Test for flammability specification and clause changed from ICF/MD/Spec/014 -clause 3 (since obsolete) to RDSO/Spec.No.-C-K 514, AMD-03 - clause 3.1, Tab -1, S.No.11.

110V DC mobile phone charging socket (3 pin prewired and with fuse)

SS hardware as against galvanised added for fixing modular switch assembly. Glass fuse type added instead of cartridge fuse because of procurement problem. 3 pin IS mark socket added instead of 3 pin multi standard socket. It is suitable for two pin also. Copper cables having PTFE insulation to JSS specification No. 51034 (latest added) as against E-beam cable since length of cable requirement is very small.

Fluorescent Light fitting:

The following notes modified in the drawing:

Fluorescent tube holder screw less Polybutylene Tere Phthalate Glass Fibre (PBT GT) rotor end holders of self locking type to IEC: 60061-1.

Avoid scratches in polycarbonate sheet with suitable cover/film.

WCB:

- Fuse cum rotary switch panel was available without box. Now drawing has been issued in line with GS/SCN coaches for fuse cum rotary switch panel with enclosure.
- Overall dimensions of junction box in pantry area with wago type terminal, revised without affecting mechanical interfacing.

SRD - Arrangement of roof wiring:

- Mirror light in wash basin deleted, since it is unreserved coach and based on feedback from Inspection that it is not necessary.
- Termination of PAIL in doorway 3 nos. of Tosha terminal block along with end clamp, baffle and fixing bracket deleted, since terminal has been incorporated in rotary switch box itself. It will reduce harness and man hours.
- In lavatory CFL fitting 3 nos. - 2 x 11 W changed to 1 x 11 W to standardize with other AC, non AC coaches.
- Corridor FL fitting 1 no. - 1 x 18 W opposite to disabled lavatory changed to 1 x 11 W CFL fitting to reduce wattage and standardization with other non AC coaches.

SDC

- 110 V DC mobile charging socket 2 nos per doorway near lavatory introduced.

SLR

- 110 V DC mobile charging socket in guard room and passenger cabins introduced.

LHB EOG LSCN Coach:

- Sticker for berth number on night light fitting revised to match berth number.

JANSHATABDI COACHES

- I. Doorway fitting changed from FL to 1 x 11W CFL.
- II. Gangway light changed to 1 x 11W CFL
- III. Mirror light fitting deleted
- IV. Reference drawing for guard's light fitting changed.

AC coaches:

- Arrangement of underframe wiring – Drawing altered and modified to suit both 1100Ah & 2 x 650 Ah system arrangement.
- Rotary switch box for inverter selection Cable size altered from 16 sq.mm to 10 sq.mm for inverter circuit and box size reduced with the approval of RDSO.
- Roof wiring diagram & harness chart drawings altered to suit cage clamp type terminals in roof junction box. This will make maintenance easy.
- For 2 x 650 Ah battery system general scheme, roof scheme, wiring diagram for roof, harness chart for roof, block and wiring diagram and harness chart of underframe drawings altered to implement standardized cross bearer arrangement in underframe, colour coding of e-beam cable, wiring for modified toilet occupied light, LED Night light and cage clamp type terminals in roof junction box.
- Arrangement of cubicle– Flexible conduits has been included in the drawings of AC coaches for improving safety standards.
- Rotary switch for inverter selection: Terminal blocks have been updated in the drawing to suit both 1 x 1100 Ah and 2 x 650 AH battery system
- Power panel for 2 x 650 AH : Top anchoring angle modified as removable type and earthing boss relocated from top to bottom side to avoid infringement with loading inside the coach. Top cable entry holes altered to dia 27.
- Alternator to Junction Box wiring for phase and field was modified from two conduits to single polyamide conduit with single Y connector, chain cleat assembly & back pieces as compared to 2 nos based on shop feedback. It will reduce the requirement of flexible polyamide conduit from 6 m to 3m and less congestion in bogie area.

AC COMPOSITE:

- Roof schematic, wiring diagram roof and underframe harness charts altered to implement cage clamp type terminal, wire end ferrules, new type of toilet occupied light and e-beam colour cables.
- Linen cum luggage rack room, Attendant-cum-linen room and Corridor light CFL fitting changed from (2x11W) to (1x11W).
- Modified Junction Box with screwless terminal incorporated.
- Length of PVC conduit altered from dia20x202 mts. to dia20x185mts.

AC 2 T, AC 3 T:

- In the lavatory CFL light fitting single 11 W introduced in place of 2 X 11 W tube to save energy and cost.
- In linen room light fitting changed from 18 W FL to 11W CFL fitting to save energy, cost.



18 FL



11 W CFL

- Compartment fan 300 mm sweep 110V AC introduced in place of 400 mm sweep to avoid problems of curtain infringement.
- Dia 20 PVC conduit total length altered from 207 m to 190 mtrs. duly improving cable routing and drawings modified to make it suitable for Stainless steel modular and biological toilet.

NEW DRAWINGS:

MUTP-II (For Motor coach, Driving Trailer coach, Trailer coach & Handicapped Trailer coach)

New drawings issued for Schematic, harness chart, above roof arrangement, roof arrangement, HT room cable tray arrangement, cab arrangement, lay out switch installation, underframe arrangement, earthing arrangement for train line conduits and traction motor cable cleating arrangement.

3 Phase Air-conditioned AC EMU with BHEL electrics: (For Driving motor coach, non driving motor coach and Trailer coaches)

new drawings issued for above roof arrangement, roof arrangement, HT & LT room cable tray and wiring arrangement, lay out switch installation, shunting cab arrangement, earthing arrangement for HT & LT room, shunting room, General arrangement of RMPU with MMD and underframe arrangement.

EMUs:

Introduced amber colour flashing tail lamp in auxiliary head light cum tail lamp for driving cab.

ARTV:

Introduced adopter plate with gasket for marker cum tail light for better access from the front end during maintenance. Previously access was from driver desk which was not suitable due to very less space.



OLD



NEW

GS coaches with centralized FDB:

- ✓ Cage clamp type terminals introduced for lights and fans.
- ✓ Arrangement of electrical cubicle with centralized FDB



GS 110V DC mobile charging sockets incorporated in lavatory partition.

SLR Coach

Arrgt.of roof wiring, conduit layout resulting in reduction in the conduit length. This design improvement will result in green initiative in terms of reduction of weight, man power.

WCB: (Non AC pantry Car):

New drawings issued for roof arrangement, schematic diagram and harness chart for roof due to reduction in FDBs and lights & fans.

LHB EOG AC 2 Tier :

Electrical General installation, schematics drg, wiring diagram for roof and Block & wiring diagram of underframe issued.

AC COACHES

- a) Closing plate (for conduit entry of inner head stock)- To avoid entry of rodents inside the coach from head stock area, sketch of closing plates for the locations below and above the power panel, top of the control panel were made and issued to Furnishing Production for implementing the same. Shell Production was advised to manufacture the plates some of the plates which were difficult to fabricate in Furnishing. These closing plates will avoid entry of rodents from the underframe area to the on board and then entry inside the compartments. It will in addition lead to improvement to the safety of electrical equipments will also improve passenger convenience.
- b) Toilet occupancy indication light: Newly designed TOIL has been provided in AC coaches which is lighter, smaller and aesthetically better.



NEW



OLD

FIRST AC COACHES:

Junction box complete with wago terminal.

SPEC ISSUE/REVISION/AMENDMENTS:

Sl.No	<u>SPEC NO.</u>	<u>DESCRIPTION</u>	<u>New Issue/Amendment/Rev.</u>
1	ICF/Elec./088	New Specification issued for Under slung mounted diesel alternator set for DEMU for J&K area of Indian Railways.	Rev.1
2	ICF/Elec/128, ICF/Elec/129, ICF/Elec/130 & ICF/Elec/131	MRVC/C, D, M & HC coaches respectively for supply and installation of electrical cable trays.	Rev.1
3	ICF/Elec/874	Power panel for 110V DC SG Air-conditioned coaches.	Rev.B
4	ICF/Elec/132	MRVC/BT all coaches for installation of conduits, cable boxes and its associated accessories.	New
5	ICF/MD Spec.97D	DEMU HHP 1400 HP electrics.	Rev.2

Man hour savings/ Financial savings:**Manhours Saved:**

The man hours in respect of the operation of cell loading and inter cell connection for AC and Conventional coaches have been revised and saved from August, 2013 onwards, as shown hereunder:

Type of coaches	Time Saved
Conventional	39796.66
Air-conditioned	20944.36
Self-propelled	6899.97
Total	67640.99

Due to introduction of Plug in male-female type connector in fans which avoided SMC type fan terminals approx. 15 Hr. per coach saving in GS, SCM, SDC, SR/JS coaches similarly EMU, MUTP, DEMU etc. approx. 18 Hr. per coach is effected which will result in annual saving of more than 20000 Hrs.

OTHERS:

Proposals received from IIT, Madras and under process of entering into MOU by ICF.

CAPACITY CUM CAPABILITY ASSESSMENT:

1. Capacity assessment carried out for 03 firms as shown in Annexure 1

2. Prototype Testing

Prototype clearance accorded for 40 items (30 firms) as shown in Annexure 2

3. Revalidation

Revalidation carried out for 13 items (09 firms) as shown in Annexure 3:

4. Inclusion of Vendors to Part – II

The list of Firms included in Electrical Vendor Directory in Part II as shown in Annex. 4

5. Up-gradation of Vendors to Part – I

The list of firms upgraded from Part II to Part I in Electrical Vendor directory as shown in Annexure 5.

6. Inclusion of LIST OF ITEMS ADDED/ MERGED / DELETED in Vendor Directory

The list of new items included in Electrical Vendor Directory as shown in Annex. 6

POWER SUPPLY AND MAINTENANCE OF MACHINERY AND PLANT

Electrical Maintenance wing in ICF

1. Distribution and maintenance of power supply to all shops, service buildings, Stores yards, colonies, ICF hospital, D&D Building ,GM's Bungalow, residential quarters and guest house in Perambur area during the year 2013-14 has generally been satisfactory.
2. Maintenance of machines, cranes, traversers, compressors, welding sets, lighting and ventilation arrangements, pump house, street lights, centralized air conditioning plants, air conditioners, water coolers, vehicles, repairs of motors & pumps etc. has been generally satisfactory.
3. Maintenance of telephone exchange, rail net and internet connectivity has generally been satisfactory.
4. The machinery and plant breakdown was 0.82% in 2013-14 as compared to 0.78% for the year 2012-13.
5. The energy consumption during the year 2013-14 was 24891186 units compared to 25414831 units for the year 2012-13.
6. The energy consumption/ECU for the year 2013-14 was 8828 units compared to 7764 units in 2012-13.

IMPROVEMENTS IN FACTORY, COLONIES AND SERVICE BUILDINGS

IMPROVEMENTS IN FACTORY, COLONIES AND SERVICE

BUILDINGS

1. Temp. calibration work station for calibration of Resistance Temperature Detectors (RTD) and Thermocouples is commissioned.
2. High efficiency 300 TR Cooling Tower has been provided in Shell admin building in place of old cooling tower.
3. Cable Laying done and Switch Gears provided for the Power Supply arrangements of New 1000 Tons Hydraulic Press and the machine has been commissioned successfully.
4. Rewiring of indoor EOT crane, Inv.no: CR-39,5 ton capacity located at A-shed "5th Bay" is completed.
5. Rewiring of outdoor EOT crane, Inv.no: CR-72, 5 ton capacity located at the open gantry of A&B-shed is completed.
6. 3 Nos of HT OCB panel was replaced with SF6 VCB in SS 11A
7. Additional Transformer was installed South colony for the load management in SS 13B
8. Replacement of conventional street light fitting MH/SV/MV with LED and induction light.
9. Rewiring of Type V quarters 40 nos and Type II quarters 150 Nos was carried out in ICF colony and Officer's flat Perambur.
10. Two Nos of High mast light provided in ICF stadium.
11. Replacement of over aged concrete street light post by galvanized light post with suitable bracket.
12. Replacement of old Hospital LT panel with new LT panels.
13. Replacement of old drinking water pump with energy efficient pumps in colony pumping station.

CONSTRUCTION WORK

During the financial year 2013-14, about 30 LAW book works were completed which were in progress in the year 2012-13 36 new works were awarded during this financial year 2013-14 amounting to Rs.4.4 Crores. Contract bills were paid to the tune of Rs.6.87 Crores for the financial year 2013-14 under various plan heads.

Augmentation of Power supply arrangement was carried out for LHB shed and electrification of Ist bay of LHB shed is commissioned.

The various other **works carried out** are listed below

1. Rewiring of ICF Higher Secondary school..
2. Energy audit is conducted during this financial year,
3. Electrification/Wiring of new building for SSE/Engineering Maintenance and SSE/Electrical Maintenance in Perambur is carried out.
4. Strengthening of underground cable distribution system with MDB's in west colony.
5. Air conditioning work in AWTI and Furnishing Admin Building is completed.

The various other Works-In-Progress for this financial year are listed below

1. Rewiring of Type-II Quarters in East colony is in progress.
2. Replacement of 6UP3 pump for raw water pump house is in progress.
3. Renovation of Elementary school in the Higher Secondary School camps is in progress.
4. Replacement of street light control SDB box in colony's is in progress.
5. Lighting arrangements in East Colony part near by RPF Barracks is in progress.
6. Additional HT ring cable laying from D&D SS26 to the new SS13B is in progress.

The various other Work Under Planning for this financial year are listed below

1. Rewiring of Type-II quarters in South colony Phase V
2. Replacement of over aged street light in colonies phase II
3. Rewiring of Type-III quarters in South Colony phase III
4. Rewiring of Type -IV quarters in all colonies final phase.
5. Replacement of Drinking Water & sewage pump with submergible Pumps.
6. Replacement of conventional street light fitting with LED/Induction street light.
7. Upgradation of ICF stadium groundwork in association with civil work.



Technical Seminars conducted for celebrating Electrical Safety week



Technical Seminars conducted celebrating Energy Conservation week



Inauguration of LHB substation by Member Electrical (ML)/Railway Board

WIND MILL PROJECT

ICF wind energy generated during the current financial year (2013-14) is 163.05 lakh units as against 224.13 lakh units during the same period of last year. The reduction of wind generation, to the tune of 27.25% compared to 2012-13 is due to power evacuation problem of TANGEDCO experienced during peak wind periods.

CDM status are given below:-.

- The Project Report has been registered Successfully with UNFCCC on 22.07.2011.
- Verification of VER & CER completed.
- VER issuance cleared by TUV Nord. VCS registration under process for sale of VERS.
- CER report uploaded in UNFCCC, CER sale under process..
- Total VER & CER acquired by ICF is.
VER (01.04.2009 to 21.07.11) - 45,882 VER's
CER(from 22.07.11 to 10.07.12) - 16, 619 CER's

Capacity Cum Capability Assessment was carried out for the following firms during 2013
– 14

Sl.No	Firm's Name	ITEM
1.	M/S Richmond , Coimbatore-641014	Power Panel 2 X 650 AH
2.	M/S Mahalakshmi Enterprises,Palakkad-678633	FRP Tray of Battery box
3.	Atul Poly plast-Agra	FRP Distribution box

Prototype Clearance has been accorded for the following Items during 2013- 14

Sl.No	FIRM's NAME	ITEM DESCRIPTION
1.	Urban Tekno Systems P Ltd,Kolkata-7100006	<ul style="list-style-type: none"> I.V coupler Socket & plug– A,B,C D &E
2.	Crompton Greaves Ltd,Nasik - 422010	<ul style="list-style-type: none"> 25 KW Lighting Arrester
3.	Richmond ,Coimbatore-641014	<ul style="list-style-type: none"> 2x650AH Power Panel
4.	Ramyaa Electrogear Industries Pvt.Ltd	<ul style="list-style-type: none"> 110 VDC Mobile charger Stainless steel Amalgamated 200 A battery charger 2 x 650AH Power Panel
5.	Samadhan systems ,Kolkata	<ul style="list-style-type: none"> Electronic load ammeter for DEMU
6.	Trinitron Control systems Pvt.Ltd,Noida	<ul style="list-style-type: none"> Set of panel to EDTS 355 Rev 1 and 1
7.	Micromot Technologies	<ul style="list-style-type: none"> 110 VDC Mobile charger
8.	Kontakt Consortium India Pvt Ltd, Chennai	<ul style="list-style-type: none"> 2x650AH Power Panel Pump Controller and MCB panel End wall terminal board Assembly & End wall MCB Panel 110 VDC Mobile charger socket LHB/GS harness as per EDTS/356 Rev-Nil
9.	Asian Cooling Systems, Coimbatore	<ul style="list-style-type: none"> 75 KW Transformer oil cooler with 1 hp blower motor
10.	Nippon KUHLEr, Coimbatore	<ul style="list-style-type: none"> 75 KW Transformer oil cooler with 1 hp blower motor
11.	Elgi Electric Industries, Coimbatore	<ul style="list-style-type: none"> Main Compressor motor 110VDC for EMU
12.	D.R Auto	<ul style="list-style-type: none"> 36W ,110v AC/DC Lamp ballast Pre wired fL fittings ICF/STD/7-6-029 col I Alt B
13.	Ambigo Electro tech	<ul style="list-style-type: none"> SGAC Power panel
14.	DRD Impex Pvt .Ltd	<ul style="list-style-type: none"> UDISH brand AXIAL fan 115V AC

Sl.No	FIRM's NAME	ITEM DESCRIPTION
15.	Dhingra Industries	<ul style="list-style-type: none"> Pre wired fL fittings ICF/STD/7-6-027 col I Alt g Pre wired fL fittings ICF/STD/7-6-017 col I Alt c
16.	Saria Industries	<ul style="list-style-type: none"> RC Fan 225 mm sweep 110VDC Fixed MS blade bracket RC Fan 400 mm sweep 110VAC Fixed MS blade Swilling
17.	Blue Star Exports, Chennai	<ul style="list-style-type: none"> Stainless steel Amalgamated 200 A battery charger 2 x 650AH Power Panel
18.	AUTEL,Mumbai	<ul style="list-style-type: none"> Modify brake application Relay
19.	K-Lite	<ul style="list-style-type: none"> CFL light Fitting to ICF/STD-7-6-023 COL -2 Alt-e
20.	ABROL Engg.Co.Pvt.Ltd	<ul style="list-style-type: none"> Cable Harness to EDTS 252 Rev H and ICF Amd 1
21.	NICCO Corporation	<ul style="list-style-type: none"> Cable Harness to EDTS 252 Rev H and ICF Amd 1
22.	Coimbatore Compressor Engineering Co .Ltd	<ul style="list-style-type: none"> 0.5 HP ABT Blower motor For Transformer oil cooler
23.	ALTOS Electronics	<ul style="list-style-type: none"> Aux Compressor for AC EMU
24.	Toyama ,Bangalore	<ul style="list-style-type: none"> Modular switches
25.	Samdhan, Calcutta	<ul style="list-style-type: none"> Electronic Load Ammeter
26.	Best choice, Bangalore	<ul style="list-style-type: none"> 36W ,110v AC/DC Lamp ballast
27.	Kamalesh industries	<ul style="list-style-type: none"> Modified FDB Cover
28.	M.N Agencies,	<ul style="list-style-type: none"> Door way CFL Fitting
29.	Anchor Panasonic	<ul style="list-style-type: none"> Modular switches
30.	Integ Electronics, New Delhi	<ul style="list-style-type: none"> Pre wired fL fittings ICF/STD/7-6-017 col I Alt c

Revalidation Test carried out for the following firms after completion of three years during 2012-13

Sl.No.	FIRM'S NAME	ITEMS
1.	Elgi Electric Industries, Coimbatore	<ul style="list-style-type: none"> Aux Compressor for AC EMU
2.	Signotron India Pvt. Ltd, Kolkata-700091	<ul style="list-style-type: none"> 2.5 KVA 110VDC/230VAC Inverter 100VA Static Inverter for Laptop/Mobile charger
3.	S.P.J. Industries Pvt. Ltd, Kolkata	<ul style="list-style-type: none"> RC fan 225 mm Sweep 110VAC MS blade with Close mesh RC fan 300 mm Sweep 110VAC MS blade with Close mesh RC fan 300 mm Sweep 110VDC MS blade with Close mesh
4.	Ambigo Electro Tech	<ul style="list-style-type: none"> 5 KVA Transformer
5.	Kontakt Consortium India Pvt Ltd, Chennai	<ul style="list-style-type: none"> Axial fan 115 VAC (HI-COOL Make)
6.	Medha Servo Drives Pvt. Ltd	<ul style="list-style-type: none"> 5 KVA Inverter
7.	Ramyaa Electro gear Pvt. Ltd, Chennai	<ul style="list-style-type: none"> 2 KVA Transformer, Starter battery charger
8.	Oblum Electrical industries ,Hyderabad	<ul style="list-style-type: none"> 42 KVA Lightening arrester
9.	MAAVE Electronics, Hyderabad	<ul style="list-style-type: none"> Led based night light with berth indication

INCLUSION OF NEW VENDORS IN PART 11 IN THE VENDOR DIRECTORY

Sl No	Firm Name	Item Description
1.	Ambigo Electro tech -	<ul style="list-style-type: none"> Modular Rotary Switch cum fuse panel to Drg GS 7-2-602 col 1&11 , GS 7-2-602 col 111 & IV
2.	kamlesh Industries-	<ul style="list-style-type: none"> Mirror Light fitting 110VDC,11W,ICF/STD/7-6-006 COL 11Alt 'C' FRP SMC moulded fuse distribution box – GS 76018 & GS 76019 Motor connection box ICF/SK/ 71470 COL 1
3.	Crompton Greaves Ltd, Nasik -422010	<ul style="list-style-type: none"> Lighting Arrester 42 kv, 10 KA,RDSO Spec E1/2/05/87 and no 1
4.	R.B Commercial corporation (RBCO make)	<ul style="list-style-type: none"> All type of HRC fuse links and fuse bases to IS:13703 (part 2/sec 2)
5.	Saria Industries	<ul style="list-style-type: none"> RC Fan 450 mm to RDSO/PE/SPEC/0050

UPGRADTION OF VENDORS FROM PART II TO PART I

SI No	Firm Name	Item Description
1.	Analog Electronics ,Chennai-6000101	<ul style="list-style-type: none">• Solid state lamp Controller RDSO/PE/SPEC/AC/0020-2000(rev 0)sept 2000 with Amd 1,2&3
2.	S International ,Mumbai	<ul style="list-style-type: none">• IV coupler –ICF/SK/7-5-053COL 11,Type E, ICF/SK/7-50-54 COL 1-Type ABCD
3.	Sakthi Electricals	<ul style="list-style-type: none">• Pre colling plug &socket
4.	Kamlesh Industies	<ul style="list-style-type: none">• Emergency feed terminal (FRP-SMC) GS 7-50-041 COL 1• Braided copper strip items 1,2&3-ICF/SK/7-2-487
5.	Kontakt Consortium India Pvt Ltd, Chennai	<ul style="list-style-type: none">• Axial fan 115 VAC 50 HZ to ICF/SK/7-6-177 (HI-COOL Make)

CHAPTER XI**CIVIL ENGINEERING****BUDGET ALLOTMENT AND EXPENDITURE MADE FOR THE YEAR 2013-14
BY CIVIL ENGINEERING DEPARTMENT**

Details	Works in progress (WIP)	New works (NW) sanctioned	WIP+NW
	(Figure in Thousands of rupees)		
Budget Allotment (Civil)2013-14	21,07,41	1,39,01	22,46,42
Revised Grant (Overall CAP & DRF only)	-	-	7,54,720
Final Grant (Overall CAP & DRF only)	-	-	76,00,88
Expenditure	15,77,14	8,48	15,85,62

ACHIEVEMENTS

The Plan Head wise Major Projects / Works completed during the year are given below.
PLAN HEAD – 31 – TRACK RENEWALS – WORKS COMPLETED

Sl. No	Description of Work	Amount (Rs. In lakhs)
1	Complete track renewal for 500M and the replacement of 10 sets and 10 points and crossings	152.35

PLAN HEAD – 42 – WIPU – SHELL DIVISION – WORKS COMPLETED

Sl. No	Description of Work	Amount (Rs. In lakhs)
1	Provision of RO plant of 2000 m3/hr for CMT lab, G & H shed, RT shop, J shop inside Shell factory	29.48
2	Extension of 3rd floor in administrative office building for Mechanical officers	52.41
3	Construction of scooter shed for Shell and Furnishing factory	16.98
4	Replacement of AC sheet with non -Asbestos sheets for Spring shop and D shop in Shell factory	35.71
5	Replacement of SE/W/Maintenance and SE/Electrical Maintenance office in Perambur	27.31

PLAN HEAD – 42 – WIPU – FURNISHING DIVISION – WORKS COMPLETED

Sl. No	Description of Work	Amount (Rs. In lakhs)
1	Construction of bins for scrap ward in Furnishing factory.	24.93
2	Replacement of existing AC sheets / GI sheets by precoated metal sheets at various cycle stand in Furnishing and Shell division	45.60
3	Replacement of fire hydrant lines at various locations in Furnishing division	34.20
4	Provision of approach sheds and vertical louvers in front of new paint shed to prevent rain water falling on shells and rain water splashing into the paint shed	121.29
5	Provision of pipeline arrangements with boosting arrangements for paint booth at Shop 54, coach leakage test at Shop 30 & 36 in Furnishing division	19.73
6	Reconstruction of MRS building extension in Furnishing division	13.96
7	Construction of storm water drain from CHI office to K7 ICF Police Station	21.66

PLAN HEAD – 51 – STAFF QUARTERS – WORKS COMPLETED

Sl. No	Description of Work	Amount (Rs. In lakhs)
1	Construction of 6 suites (Rest House) for Group B and Senior Scale officers at Perambur	39.30

PLAN HEAD – 52 – STAFF AMENITIES – WORKS COMPLETED

Sl. No	Description of Work	Amount (Rs. In lakhs)
1	Providing safety grills for staff quarters at ICF South colony-Phase IV	50.49
2	Providing wire net for type-I, II & III Quarters in all colonies–Phase III.	32.21
3	Development of park by providing compound wall, landscaping, play equipments, fountain etc. at South colony	23.08

Sl. No	Description of Work	Amount (Rs. In lakhs)
4	Providing paver block landscaping and face lift for ICF Hospital	25.00
5	Replacement of AC sheet by RCC roof at Welfare Centre in East colony	24.51
6	Replacement of dilapidated roof at Railway Club	34.89
7	Replacement of existing steel tank by RCC overhead tanks with GLR for officers quarters at Perambur	34.39
8	Extension of Welfare Centre - Furnishing	7.11
9	Providing separate sewer line arrangements for Type I quarters at South colony.	38.68
10	Improvement to the meeting room by providing false ceiling, wall paneling and floor tiles in Perambur area	12.20

WORKS IN PROGRESS

The progress of the Rs.252.04.Cr. project for modernization & expansion of ICF manufacturing technologically upgrades coaches with increased production capacity from 1500 to 1700 coaches per year is as follows:

I. Civil Works executed

(fig. Rs. In lakhs)

Sl. No	Name of work	Cost	Remarks
1	Construction of Shed for Fiat Manufacturing shop & Open gantry including diversion of storm water drain for Modernization and expansion of Integral Coach Factory, Chennai from 1500 to 1700 Coaches.	1404.00	Completed
2	Construction for office accommodation, Substation with cable trench in & outside & toilet blocks with water supply and sewerage arrangements. Dismantling of existing 3 nos. of Nissan shed & Reconstruction of 2 nos of Nissan shed inside Furnishing Division & laying of two tracks with inspection pits, surface drain along with Fiat Bogie Shed for Modernisation and expansion of Integral Coach Factory, Chennai from 1500 to 1700 Coaches.	605.00	90% work completed. i.Raw & drinking water pipe line work are in progress. ii. False ceiling in office accommodation is in progress.
3	Construction of compound wall with main entrance gate in connection with Modernization and expansion of Integral Coach Factory, Chennai from 1500 to 1700 Coaches.	161.00	95 % work completed. i.300 mtrs. Of existing compound wall on southern side to be raised to matching with existing compound height.

(ii) Civil Works executed by COFMOW

Sl. No	Name of work	Cost (fig. Rs. In lakhs)	Remarks
1	Construction of Assembly & Manufacturing shed (2 bays) including electrical works and provision of main M&P (on turnkey basis) for expanding Shell Assembly production of capacity.	7339.00 (Civil portion - 2154.00)	95 % work completed. i) Transfer bay track foundation , Flooring & sheet covering & erection of crane girder in Transfer bay, Storm water drain & side wall are in progress.
2	Civil, Electrical works and provision of M&P for other support facilities required for expanding overall production capacity from 1500 to 1700 coaches per year.	5301.00 (Civil portion - 1339.00)	20 % work completed. i. Foundation work completed for store shed. ii. Compressor room completed, iii. DG shed foundation and erection work completed. iv. Traverser work is in progress. v. Structural work for storage shed yet to be started.

PLAN HEAD – 31 – TRACK RENEWALS – Works-in-progress

Sl. No	Description of Work	Amount (Rs. In lakhs)
1	Complete track renewal for 1 KM in Furnishing and Shell division.	123.73
2	Replacement of existing 1 in 8 1/2 points and crossings on wooden layout with fan shaped PSC layout in Shell And furnishing division-10 sets.	130.10

PLAN HEAD – 42 – WIPU – SHELL DIVISION – Works-in-progress

Sl. No	Description of Work	Amount (Rs. In lakhs)
1	Provision of roof extractors in shell division	46.04
2	Providing concrete aproning between tracks on the northern side of A & B shed in Shell factory (Phase III)	66.86

3	AWM's office remodeling and improvement	45.26
4	Reconstruction of stores building with increased storage area for construction works in Shell division	47.18
5	Replacement of AC sheet in roofing with precoated metal sheets in K shed in Shell factory	42.31
6	Replacement of existing damaged gutters with galvalume gutters in various shops in Shell division	47.85
7	Replacement of FRP sheet with polycarbonate sheets for day light facilities at C shed in Shell division	22.90
8	Replacement of roof sheets and arresting and rain water leakage in Shell division in Shop A,B,J,G and H shed.	118.29
9	Replacement of AC sheet by galvalume sheet in A & B shed,' E' shop bogie assembly shop in shell factory.	177.63
10	Extension of shop 15 outside of end grinding section (south west corner of L shed) size 15m x 15m with north light roof	53.22
11	Modernization of offices in Shell shops for Assistant scale officers rooms, supervisors rooms such as window panes, floor tiling, furnishing, renovation of toilet, provision of furniture etc. Phase - I	30.03
12	New building for RT Electrical shed with enhanced charging points in Furnishing division	38.37
13	Construction of dedicated HT cable trench at Shell and Furnishing division	23.14
14	Widening of roads in Shell division between B shed South and E,F,D & L shed North	52.35
15	Covering open space in between bogie frame shop and E shop in Shell division	31.25
16	Providing apron concrete between tracks on the north side of A & B shed in Shell division	56.22
17	Providing life line arrangements for all the shop inside Shell factory (Phase-I)	31.17
18	Providing CC flooring for stacking of store materials near ASRS shed inside Shell factory.	36.27
19	Provision of inclined roof on the Northern side extended portion of G-Shed	18.50

PLAN HEAD – 42 – WIPU –FURNISHING DIVISION – Works-in-progress

Sl. No	Description of Work	Amount (Rs. In lakhs)
1	Extension of D & D building	52.44
2	Replacement of existing AC sheet by precoated metal sheets at TL wards, screw ward, Aluminium ward and shop 34 stores in Furnishing division	40.54
3	Replacement of AC sheet / gutter with galvalume sheet and main store shed in Furnishing factory	53.91
4	Strengthening of roof with polyurea layer on the office accommodation in Furnishing division	48.13
5	Replacement of existing AC sheet roof and gutters with galvalume sheet in Shop 30, 32 and 33.	99.98
6	Additional Nissan shed for Bogie parking in shop 54	70.33
7	Construction of pathway on both side of villivakkam coaching yard	25.11
8	Reconstruction of dilapidated storm water drain at various shops in Furnishing division	21.98
9	Reconstruction of scrap ward building in Furnishing division	32.73
10	Concreting of area by the side of peripheral road for storage of items	73.13

PLAN HEAD – 51 – STAFF QUARTERS – Works-in-progress

Sl. No	Description of Work	Amount (Rs. In lakhs)
1	Reconstruction of Type- I quarters by type-II 36 units in South colony	455.33
2	Construction of Type- III -48 units in South colony	670.02
3	Replacement of Type-I quarters with Type-II – 39 units in North Colony	348.56
4	Reconstruction of Type II quarters IV units Block No. 106 in West colony	32.56

PLAN HEAD – 52 – STAFF AMENITIES – Works-in-progress

Sl. No	Description of Work	Amount (Rs. In lakhs)
1	Construction of sewage collection well and improvement to sewer line in Perambur Officers quarters	34.33
2	Reconstruction of storm water drain in all colonies - Phase II	36.35
3	Construction of reading room at south colony welfare center	16.15
4	Construction of common toilets for the users of both first floor and ground floor at ICF Kalyanamandapam.	17.58
5	Improvement to the sewer line in North colony	22.14
6	Construction of pavilion at ICF Stadium	60.00

PLAN HEAD – 64 – OTHER SPECIFIED WORKS – WORKS IN PROGRESS

Sl. No	Description of Work	Amount (Rs. In lakhs)
1	Construction of GYM building in ICF stadium	42.80
2	Construction of covered shed for children gathering at Rail Museum.	7.99
3	Promotion of food court with eat out corridor at RRM	12.50

CHAPTER XII

PERSONNEL BRANCH

COMPUTERIZATION OF PERSONNEL BRANCH ACTIVITIES

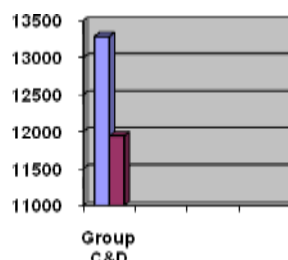
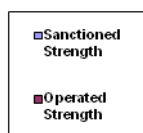
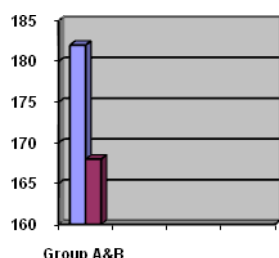
Personnel Branch/ ICF has a proud record of early and effective computerization of office works to the benefit of PB staff and officers as well as to the employees it serves. Most of the areas have been computerized over the years from 1990, the unique feature being that all programs have been developed "in house:" and maintained "in house" resulting in recurring savings of lakhs of rupees to the Administration.

The following applications were developed during the year 2013-14 as a part of the computerization in Personnel Department of ICF

- On Line Grievance Handling system based on SMS received from employees
- On line distribution of completed APAR with secured password
- ID cards for superannuating employees.
- Software for executing various stages of implementation of cadre restructuring orders.
- Software of automatic allotment of trade for Technician Gr.III PQ selection based on options given and seniority.
- Software of counting of votes for Elections to Institute Management Committee.

MARCH TOWARDS RIGHT-SIZING AND COST EFFECTIVE MANPOWER

As on 31.03.2013		Category	As on 31.03.2014	
Sanction	Operated		Sanction	Operated
175	161	Group A & B	182	168
13896	11666	Group C & D	13284	11942
14071	11827	Total	13466	12110



DETAILS OF WORKCHARGED POSTS IN GAZETTED CADRE AS ON 31/03/2013:

Department	HAG	SAG	JAG	SS	Gr.B/ JS	Total
Administration	0	0	0	1	0	1
Accounts (including Data centre)	1	0	1	7	0	9 *
Electrical	0	1	2	2	2	7
Engineering	0	0	1	1	0	2
Mechanical (including Lab Orgn)	0	2	6	7	1	16
Stores	1	0	1	5	2	9
Personnel	0	0	1	1	0	2
Medical	0	0	0	0	1	1
Total	2	3	12	24	6	47

Excluding one Group B post of 'Programmer' operated as 'SSA' in Sr.Scale on differential basis against work charged provision.

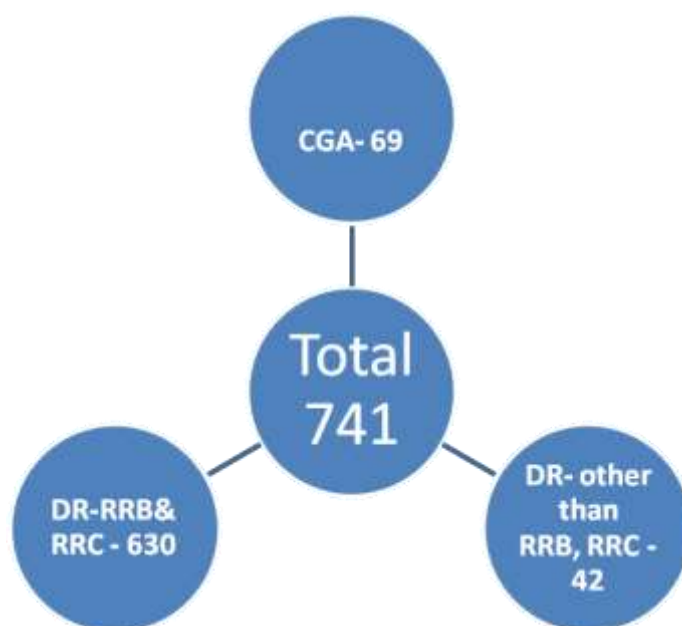
OPTIMUM UTILIZATION OF MANPOWER:

During the year, it was ensured that no employee remained surplus as a part of continuing exercise.

ADHERENCE TO TARGETS FOR MANPOWER INTAKE:

Number of non-gazetted staff recruited through various sources by ICF administration is as under for the year 2013-14:

Category	2013-14
	No. of staff
Compassionate Grounds	69
Direct Recruitment (RRB, RRC)	630
Direct Recruitment (other than RRB/RRC- sports & substitutes)	42
TOTAL	741



Appointments other than through compassionate grounds are within the permitted intake prescribed by the Railway Board.

ENGAGEMENT OF ACT APPRENTICES

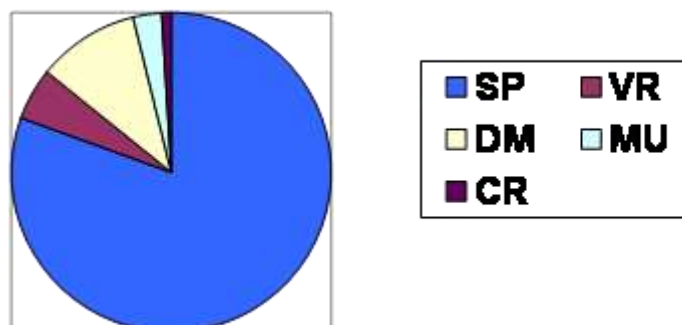
During the year 2013-14, 500 candidates were engaged under the Apprentice Act, 1961 in various designated trades for training. 7 graduate apprentice and 15 Technician apprentices were engaged also under the Apprentice Amendment Act 1973.

SETTLEMENT ON RETIREMENT AND OTHER CASES

ICF has a proud tradition of settling all the cases at the earliest. During this year also, settlement payments were arranged on the next working day of retirement for Superannuation cases.

Nature of Termination	2013-14	
	Total	Settled
Superannuation*	335	335
Voluntary retirement	22	22
Compulsory retirement	07	04
Medically unfit cases	12	12
Demise	52	43
Total	428	416

All superannuation cases were settled



Settlement on Retirement 2013-14

QUARTERS POSITION

Category	As on 31.03.2014		
	Strength	Occupied	Percentage
Group A & B	168	77	45.83
Group C &D	11942	2692	22.54
Total	12110	2769	22.86

WELFARE OF EMPLOYEES BELONGING TO SC/ST/OBC COMMUNITY

Reservation percentage prescribed for SC/ST/OBC is as under:

	SC	ST	OBC
Local recruitment	15	7.5	27
Recruitment on All India basis	15	7.5	27
Promotion	15	7.5	-

Representation of SC/ST/OBC on initial recruitment and on promotion (SC&ST) is being taken care of so as to ensure prescribed percentages.

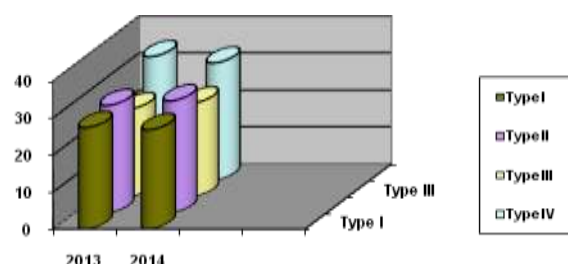
Group	Recruitment as on 31.03.2014				
	Total Vacancies	SC Recruited		ST Recruited	
		No.	%	No.	%
C & D	741	145	19.57	45	6.1

Adequate representation of SC/ST is available.

Group	As on 31.03.2014				
	Total	SC		ST	
		No.	%	No.	%
A	86	22	25.58	7	8.13
B	82	25	30.48	6	7.31
C & D	11942	2835	23.77	808	6.77
Total	12110	2882	23.79	821	6.77

Number of quarters of each type allotted to SC/ST employees.

As on 31.03.2013			TYPE	As on 31.03.2014		
Total allotted	Number allotted to SC/ST	Percentage		Total allotted	Number allotted to SC/ST	Percentage
856	234	27.33	I	856	229	26.75
1633	473	28.96	II	1633	493	30.18
254	60	23.62	III	254	64	25.19
117	39	33.33	IV	117	37	31.62
2860	806	28.18	Total	2860	823	28.77



Number of employees promoted and the number and percentage of SC/STs respectively during the year 2012-13 vis-à-Vis 2013-14:

As on 31.03.2013					Group	As on 31.03.2014				
Total promoted	SC		ST			Total promoted	SC		ST	
	No. promoted	%	No promoted	%			No. promoted	%	No. promoted	%
-	-	-	-	-	A	-	-	-	-	-
8	1	16.6	1	16.6	B	11	1	9.09	0	-
1329	277	20.84	69	5.19	C&D	3008	415	13.79	122	4.05

PRODUCTIVITY THROUGH BETTER INDUSTRIAL RELATIONS:

During the year, excellent Industrial relations were maintained and there was no loss of man-days on account of stoppage of work etc. There was constant interaction with the elected representatives of the staff council by way of informal and formal meetings. Formal meetings were held as given below:

Details of Staff Council Meeting held during the year 2013-14

Meetings	Date	Total No .of subjects discussed	No. of subjects finalized	No. of subjects pending
With Railway Board officials	Nil			
5 th meeting of XVIII Staff Council	14.06.2013	57	12	45
6 th meeting of XVIII Staff Council	20.08.2013	63	14	49
7 th meeting of XVIII Staff Council	20.11.2013	59	-	59
8 th meeting of XVIII Staff Council	05.02.2014	60	27	33

Apart from the above informal meetings were also held with the Staff Council. Informal meetings were held with the OBC Association on 7.11.2013 and SC/ST associations on 25.06.2013.

In addition to this, Meetings with Rly Board Members were also arranged. Meeting of SCMs was arranged during the visit of Member Mechanical Shri.Alok Johri on 10.01.2014(Friday). Once again Meeting of SCMs with the Chairman Railway Board was arranged on 31.03.2013.

STAFF BENEFIT FUND:

The Staff Benefit Fund in ICF is managed by a Staff Benefit Managing Committee as per the provisions laid down under Chapter – VIII of the IREC Vol.I. A sum of Rs.500/- as per Capita grant for each employee is sanctioned by the Board annually.. The details of the activities undertaken during the year 2013-14 are as follows:

This fund is utilized for the welfare of the ICF employees. for providing scholarships for higher education, providing relief as financial support during distress, for promoting cultural activities and for recreation.

Education

- (i) **Technical Scholarship** was awarded to 751 children of eligible non-gazetted staff who are undergoing graduation in Engineering and Medicine to the extent of Rs. 18,10,126/- (2013-14).
- (ii) **Scholarship** amount for pursuing higher education were awarded to 101 Children who are wards of ICF Employees in the grade pay 1800/- and below during the year 2013-14, to an extent of Rs.17,02,200/-

Recreation

Children's holiday camps was organized for the wards of ICF employees) to Courtallam, Nagercoil, Kanniyakumari Trivandrum, Munnar and Cochin from 23.5.2013 to 31.05.2013, during the year (2013-2014).

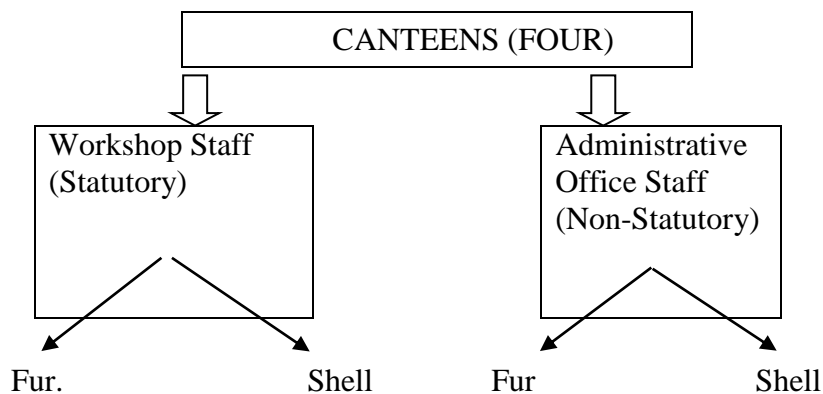
Relief to distress, sickness.

- (i) During the year 2013-14, Funeral expenses of Rs.3000/- was paid to 51 dependants of deceased employees and Reimbursement towards cost of spectacles of Rs.1000/- was allowed to 995 such employees and those Employees who were on long sick-with no leave and no pay; a relief of Rs.3000/- or Rs. 4000/- (as per the grade pay) was also granted to 35 such employees for which altogether a sum of Rs.12,24,802 was granted.
- (ii) Under Women empowerment activities, International Women's Day Function was held with several competitions held enabling women staff to show case their talents. Exclusive one day camp was organised for Women Staff and amount of Rs.1,93,321/- was granted.

Indigenous system of Medicine

- (i) An Ayurvedic and a Homeopathy clinic are functioning under the aegis of SBF for the welfare of the employees.
- (ii) A Dietician is engaged and attached to the ICF Hospital for the benefit of the employees. A sum of Rs.3,79,312/- is spent from this head to maintain the above clinics for the welfare of the employees.

CANTEENS:



ICF maintains two Statutory canteens as per Sec.46 of Factories Act and Rule 65 of Tamilnadu Factories Rules statutory canteens (viz.), ICF Workers Canteen/ Shell and ICF Workers Canteen/Furnishing. The canteens are controlled and managed by the managing committee, as per rule 70 of TN Factories Rules, 1950, consisting of elected members and nominated members. Chairman of the committee is an officer nominated by the Administration. The Chairman convenes periodical meetings to improve the quality of food items served. The canteen prepares tea, coffee, snacks, breakfast and serve the same to the employees at their work place. The canteen is catering to around 5000 & 4000 workshop employees of Shell and Furnishing Divisions respectively.

There are also two Canteen extension counters, one each within the premises of the Factory. The Statutory canteens cater breakfast items to the employees at various vending points in the factory. But lunch is served only at the canteens.

The tenure of the previous Canteen Managing Committee of the Statutory canteens expired on 30.04.2013. The same was extended with the knowledge of the Director of Industrial Safety & Health upto 30.06.2013. Subsequently, Elections to the canteen managing committee was proposed. But, one of the unrecognised unions had filed a Writ Petition before the Hon'ble High court; as a result, the elections have been stayed. However, an interim committee has been formed to manage the affairs of the Statutory canteen until the elections are held and a new committee is put in place.

Workers Canteen/Shell

The canteen caters to the needs of about 5000 employees of Shell division with breakfast, snacks, beverages and meals. Coffee, tea and snacks are served in morning and evening session. Meals are served in the canteen counter, rest of the items are served to the workers at their work spot. In addition to this, one extension counter is functioning inside the factory near B- shop where hot milk, tea, coffee, snacks and special breakfast are sold.

The canteen is equipped with an Automatic Dosa which has a capacity to make 300 dosas in an hour, food warmer, deep freezer, refrigerator, electronic weighing machine, new wet grinder etc.

Prices were revised in Worker's canteen/shell with effect from 31.01.2012. There was an outstanding amount of Rs.4,28,300 to the vendors and it was repaid by receiving grant from

SBF to the tune of Rs.4,32,915/-.However, the Workers Canteen Shell managed to repay the amount to SBF by generating funds by avoiding wastages and by close monitoring of canteen services.

Workers Canteen/Fur.

The canteen caters to the needs of about 3400 (Appx) employees of Furnishing division with breakfast, snacks, beverages and meals. Coffee, tea and snacks are served in morning and evening session. Meals are served in the canteen counter, rest of the items are served to the workers on their work spot. In addition to this, there are several vending points of service in the shop floor. The food items are taken by trolley by the vendors for supply at such points.

In addition to this, one extension counter is functioning inside the factory adjacent to shop 33. The canteen is functioning at both day and night shifts for the benefit of the employees. Catering is also done for the new LHB shed until a full time pantry is being commissioned.

Orders for the preparation of sweets, beverages and snacks and Spl. lunch are also undertaken on the occasions of the employee's retirement functions. The total volume of sales for the financial year 2013-14 is Rs. 61,16,430- and meals token sold are 32,838.

Apart from the above, there are 2 Non-statutory canteens, i.e., ICF Admn. Office Canteen /Shell and ICF Admn Office Canteen/Fur are also functioning for the benefit of the Administrative staff located in the premises of the Administrative offices of Shell and Furnishing respectively.

ICF INSTITUTE

The ICF institute was started in the year 1954 to promote recreational and cultural activities amongst the ICF employees and their family members. As on date around 8363 employees of ICF have enrolled themselves as members of the Institute.

The Institute is managed by a committee consisting of nine elected members and six nominated members of the ICF administration. The tenure of the managing committee is three years.

Elections to the Managing Committee of Institute were held on 7.12.2013 and the new Institute Managing Committee was constituted on 24.12.2013.

The major sources of income to the Institute are the monthly subscription from the members, which are fixed as low as Rs.25/- per month for employees in pay band PB-I and Rs.30/- per month for employees in pay band PB-II and above in the revised VI Pay Commission Scales.

Dr.Ambedkar Arangam, an auditorium with a seating capacity of around 800 persons is a part of ICF Institute where cultural and recreational programmes are held throughout the year. An amount of Rs.19,000/- is collected for booking of Arangam, which comprises of Rs.15,000/- towards rent and Rs.4,000/- towards refundable deposit which will be returned after deducting electric consumption charges.

The Institute runs a library for its members and spacious reading room has been provided, where over 3,000 books both fiction and non- fiction etc. in Tamil, English, Telugu, Malayalam etc. are available. New books are purchased every year to keep the library up-to-

date. The library also has a reference section where books on general knowledge, encyclopedia and rare books are available. Apart from this, all reputed dailies and magazines in Tamil, English, Telugu and Malayalam are also made available in the reading room for the benefit of the members.

Institute members are availing the facilities for playing Table Tennis, Badminton & Carrom Board. Children treat was conducted on 26.01.2014 for the benefit of the wards of ICF Institute. Members on the eve Pongal festival and competitions for children in various disciplines like Quiz, Dance, Drama and Music were conducted and prizes were distributed on the function held on 26.01.2014. A skating rink is under construction and a Dining hall will also come up at Dr.Ambedkar Arangam

SCHOOLS

In ICF, there are 4 schools (2 under state aided free education and 2 run as self-financing institutions), which are recognized by the Education department of Government of Tamil Nadu and managed by the committee of management constituted by the Administration.

Name of the School	Year started	Std. From to	Medium of instruction	No. of students	No. of teachers	Non-teaching staff	No. of sub-staff
ICF Silver Jubilee Primary School	1964	LKG to V	English	961	25	2	9
ICF Silver Jubilee Mat. HSS	1979	VI to XII	English (Tamil & Hindi as 2 nd languages)	960	42	0	6
ICF Colony Aided Primary School	1956	I to V	Tamil and Telugu	150	8	0	2
ICF HSS	1960	VI to XII	Tamil, English and Telugu up to X std.	1155	48	2	9

ICF SILVER JUBILEE MATRICULATION SCHOOL (PRIMARY SECTION)

Academics: The pass percentage of the school for the year is 100%

Extra curricular activities:

Cubs and bulbul classes are conducted in once a week.

Hand and Work Needle work:

All the children are taught handwork and needle work. The work are exhibited during the Railway Week Celebrations

Functions:

The School Annual day was celebrated on 06.01.2014. Teacher's day was celebrated on 5th September and Sports day was celebrated on 8th March 2014. Independence day and Republic day was celebrated.

Inter class competitions:

Inter class competitions was conducted for the children LKG to V std in August 2014. Thirukkural competitions was conducted for the children from LKG to V std. Inter class quiz competitions for conducted for the children from II to V std.

ICF SILVER JUBILEE MATRICULATION HIGHER SECONDARY SCHOOL

Methodology:

Students' skills, good manners, etiquette and acquisition of academic merits. At the higher level, pupils are prepared for the Matriculation Examinations in X std. and the State Board Examinations at +2 stage

Co – curricular activities.

1. Debates, Quiz, Elocution, Art competitions are conducted as per schedule.
2. Rotary club functions well, with students participating in the RYLA, an inter school event.
3. Special training is given to the promising athletes and sportsmen.
4. The school competed in a number of inter school tournament and won many laurels in foot ball and Basket ball, Table tennis, boxing. A.P.Srija and Maria Brinda of IX std participated in National Athletic meet.
5. Guides and scouts have their regular meetings and attend training camps. Many have won RajaPurashkar and President awards.
6. Many of our pupils participated in other inter school competitions and a number of prizes were won.

Counseling/Meetings:

Parent teachers meetings were conducted along with counseling session for the seniors. Staff meetings were conducted periodically to assess performance and draw up more realistic programmes.

Celebrations:

The school celebrated the Independence Day, Republic day, Children's day and Annual Day.

Results

	No. of students appeared	No. of students passed	Pass %	No. of I Classes
Matriculation	141	138	98	59
Higher Secondary	128	122	95	86

School toppers:

Matriculation

- I. E.Swathi - 471/500
- II. S.Gomathi - 469/500
- III. T.G.Lokesh Babu - 468/500

Higher Secondary

- 1. Padmanabha Prasanna - 1147/1200
- II. S.Maheswari - 1130/1200
- III. S.Nazia Banu - 1129/1200

S.Ranjani has secured centum in Accountancy

L.S.Ancy Sujitha has secured Centum in Business Maths.

ICF HIGHER SECONDARY SCHOOL

ICF High school came into existence in 1960 and evolved into Higher Secondary school in 1978.

Co- Curricular activities

NCC army (Boys) - Around 100 cadets have enrolled and 30 of them attended Combined Annual Training Camp at Vellammal Mat. Hr. Sec. School from 22.9.2013 to 1.10.2013.

Naval Wing

Under the guidance of Shri D.Gopalakrishnan, the Naval officer, 60 cadets participated in the Annual training camp at Sathyabama Engineering College, Kelambakkam, Chennai. 37 cadets appeared in "A" certificate examination and passed successfully with most of them getting A grade.

Scouts & Guides, Junior Red cross, NSS

There are 55 scouts and 60 guides. The scouts and Guides participated in Rainwater harvesting Rally, Aids awareness Rally and World Environmental day Rally and created awareness among the public on conservation of water protection, against aids and pollution control.

The junior red scross and the NSS unit actively involved in Rain water Harvesting rallies and observed Worlds Aid day on 1st December.

Sports and Games

The various prize winners and runners during the year are as under

Under 19 yrs category – Boys were winners in Foot ball, Kabaddi and basket ball

Under 19 yrs SGFI State Level Selection (Cricket) K.Gangadharan of class XII was selected as Off Spinner.

The results for the year 2011-12 are asunder

HSC: 59%

SSLC: 71%

ICF COLONY AIDED PRIMARY SCHOOL

1. Every Monday, the National Flag is hoisted and students take oath against untouchability. The important news items are read in the Prayer daily. Thirukural is recited and meaning is explained. Yoga and Mediation classes are also conducted.

2. Independence day was celebrated on 15th August.

3. Girl baby's day was celebrated on 11.10.2013

Other activities

Every Monday Manavar Mandram is conducted and students are given opportunity to identify their capacities by encouraging them.

Noon meal scheme

About 150 children are given lunch every day by the State Government under the Scheme.

Academic Results:

The school has achieved 100% results in all the classes.

THE ICF EMPLOYEE'S CONSUMER CO-OP STORES LTD.

1. Name of the registered : The ICF Employee's Consumer
Co-operative Society : Co-op Stores Ltd., X-346
: Ch-38.

2. No. of sections actively : Functioning 3 fair price shops and a textile section.

3. No. of membership : 6399

4. Amount of share capital : Rs.1,21,570

5. Business turnover including : Rs.93,85,881
fair price shops.

6. Amount of subsidy given : NIL

HOLIDAY HOMES:

ICF has Holiday Homes at Udhagamandalam (4 suites) and at Kodaikanal (4 suites) and Courtrallam (2 suites) for the benefit of non-gazetted employees of ICF.

TOURIST COACH:

The ICF has a Tourist coach from the year 1986. The labour cost was borne by all the employees at Rs.30/- per employee. The coach is being allotted to the employees for holiday camps, industrial tours and also for tours organized by employees in groups. The allotment is done in two halves in a month. For the year 2013-14, the coach was allotted for Children's holiday camp and Staff Council industrial visit.

QUARTERS:

The ICF administration provides 5 types of Quarters to employees. The total no. of quarters in ICF Colony at the end of the year 2013-14 is 3134 units.

New constructions during the year 2013-14

Type III – 48 units Type II – 36 units.

ST.JOHN AMBULANCE:

There are five Ambulance and one nursing Division of St.John Ambulance Brigade, ICF Corpus having a total strength of 152 members including Corps commander Dr.Renuka Sridhar, CMO/RH/ICF and other officers. Parade and First Aid practices are being conducted regularly. They have been 40 parades and 4 special parades like Republic day parade, Independence Day parade etc.

Details of First Aid services rendered.

S.No.	Occasions	No. of occasions	No. of cases attended
1.	Public duty (Local & Out station)	126	586
2.	Off – Duty (Inside & out side of factory)	28	65

On 13th March 2014, Annual re-examination in First Aid and Home nursing was conducted by the Divisional Commander (Medical) for Divisional level and Corps Commander (M) for Corps level.

Training camp

1. The annual training camp was held at Kimber Gardens, Gaja Malai, Trichy from 29.7.2013 to 02.8.2013. 52 members attended the camp.
2. The Annual combined Corps level camp with Madras Corps was held at RCF/Kapurthala during the period from 18th February 2014 to 20th February 2014. Totally 44 members attended.

Blood donation

Many of the SJAB members, including officers have donated blood more than 22 times to the public and employees of ICF during emergencies.

ICF DISTRICT BHARAT SCOUTS & GUIDES:

ICF District Association has a registered strength of 877 members for the year 2012-13 with 5 District officials 579 scout wing and 293 Guide wing.

Services provided

- District Rovers rendered service in connection with the Annual Day Celebrations of ICF Elementary School, ICF on 09.04.2013.
- Rovers serviced during Railway Week Celebration of Southern Railway held at Raja Annamalai Mandaram on 12.04.2013.
- Rover & Ranger rendered service with Meeting of "TOLIC" and Joint Rajbhasha Celebration held at IIT Campus/ Guindy on 28.10.2013.

Awards & decorations:

1. Shri.A.Manickavasagam, Dy.CME/Production & District Commissioner/Scouts & Smt. Vijaya Venkatesan, ANO/ICF & District Commissioner/Guides received the Best District Award from G.M/S.Rly at Rajah Annamalai mandram during the Railway Week Celebrations.

2. ICF District Rovers and Rangers received the cash award of Rs.7000/- for their parade in Republic Day.

The various group's activities are Chatrapathi Shivaji Rover Crew, Jhansi Rani Guides, Kalidas Cub Pack, Kamban Scout Group, Kamaraj Rover Crew, Mother Theresa Guide, Sarojini Guide, Subhas Scout, TTC Rangers, Vanchinathan Scout, Valluvan Scout troop, V.O. Chidambaram Scout.

SPORTS ASSOCIATION- PERFORMANCE REPORT
FOR THE YEAR 2013-14

April, 2013

Sl. No.	Date		Tournament	Position
	From	To		
1.	01.04.2013	07.04.2013	All India Volleyball Tournament at Koliyadukkam, Kasaragod.	ICF Volleyball Team secured Second Place.
2.	13.04.2013	20.04.2013	All India Volleyball Tournament at Kambalakkad Wayanad, Kerala	ICF Volleyball Team secured First Place
3.	15.04.2013	19.04.2013	All India Fide Rating Chess Tournament at Mysore	Shri. Y. Syed Anwar Shazuli of ICF secured Third Position.
4.	20.04.2013	20.07.2013	Asian Volleyball Championships at Dubai from 28.09.2013 to 06.10.2013	Shri. Prabhakaran of ICF has been selected for the Indian Volleyball Team for the Asian Championships
5.	24.04.2013	28.04.2013	All India Fide Rating Chess Tournament at Thrissur.	Shri C. Praveen Kumar of ICF secured Second Place.

May, 2013

Sl. No.	Date		Tournament	Position
	From	To		
1.	04.05.2013	05.05.2013	All India Invitation Men Ball Badminton Championships at Erode	ICF Ball Badminton Team secured III Place.
2.	16.05.2013	18.05.2013	All India Rapid Chess Tournament at Rajapalayam.	Shri R.R. Laxman of ICF secured Second Place.
3.	09.05.2013	13.05.2013	24 th Cusat International Rating Chess tournament at Ernakulam	Shri. Syed Anwar Shazuli of ICF secured First Place.

June, 2013

Sl. No.	Date		Tournament	Position
	From	To		
1.	15.06.2013	20.06.2013	National City Chess Championships at Kottayam	Shri R.R. Laxman, Emp. No. 839033, Office Supdt. Shri. Karthikeyan and Shri. Praveen Kumar, Emp. No. 849397, Sr. Clerk of ICF represented Chennai District which won the title.
2.	22.06.2013	23.06.2013	3 rd State Level Open Chess Tournament at Trichy	Shri Y. Syed Anwar Shazuli, Emp. No. 806901, Jr. Progressman of ICF won the Title.
3.	19.06.2013	27.06.2013	Asian Youth Chess Championships at Iran	Shri T.J. Suresh Kumar, Emp. No. 800981, Office Supdt. was Coach of the Indian Team. India secured 10 Gold Medals, 4 Silver Medals & 5 Bronze Medals in the above Championships.
4.	04.06.2013	07.06.2013	Inter-State Athletic Championships at Chennai	Shri. Prem Kumar, Emp. No. 861927 of ICF (new recruit) created a record leaping to 8 mts. (Long Jump). Based on the above performance, he has been selected to represent India in the 20 th Asian Athletic Championships at Pune from 03.07.2013 to 07.07.2013.

July, 2013.

Sl. No.	Date		Tournament	Position
	From	To		
1.	03.07.2013	07.07.2013	20 th Senior Asian Athletic Championships at Pune	Shri K. Premkumar (new recruit) Emp. No. 861927, Jr. Clerk, PB/Shell, secured Silver Medal.
2.	13.07.2013	15.07.2013	St. Joseph's College of Engineering All India Invitation Ball Badminton Tournament at Chennai.	ICF Ball Badminton Team secured Second Position.
3.	24.07.2013	26.07.2013	10 th All India Railway Powerlifting Championships at Secunderabad.	Shri S. Arun, Emp. No. 858963, Mali, secured Gold Medal 66 kg. category, Shri V. Ramesh, Emp. No. 808860, Tech. Gr. I, secured Bronze Medal in 105 kg. category and Shri T.V. Madhavan, Emp. No. 858955, Mali, secured Bronze Medal in 59 kg. category.

August, 2013.

Sl. No.	Date		Tournament	Position
	From	To		
1.	21.08.2013	26.08.2013	Sr. National Powerlifting Championships at Manglore	Shri S. Arun, Emp. No. 858963, Mali of ICF secured GOLD Medal.
2.	17.08.2013	18.08.2013	All India Kabaddi Tournament at Maruthakulam (Tirunelveli)	ICF Kabaddi Team secured Runners-up.
3.	23.08.2013	25.08.2013	78 th All India Railway Athletics Championships at New Delhi.	Shri K. Prem Kumar, Emp. No. 861927, Jr. Clerk of ICF secured GOLD Medal. Shri. Suresh, Emp. No. 859018, Jr. Clerk, of ICF secured GOLD Medal.

September, 2013

Sl. No.	Date		Tournament	Position
	From	To		
1.	07.09.2013	10.09.2013	53 rd National Open Athletics Championships at Ranchi	Shri A. Suresh, Emp. No. 859018, Jr. Clerk, represented Indian Railways and won Gold Medal in 110 mtrs. Hurdles. Shri K. Premkumar, Emp. No. 861927, Jr. Clerk, has represented Indian Railways and won Silver Medal in Long Jump event.
2.	05.09.2013	09.09.2013	State Level Kabaddi Tournament at Thanjavur.	ICF Kabaddi Team secured First Place.
3.	20.09.2013	22.09.2013	All India Railway Ball Badminton Championships at Jolarpettai	ICF Ball Badminton Team secured First Place.
4.	22.09.2013	28.09.2013	26 th All India Railway Chess Championships at Hubli	ICF Chess Team secured Third Place.
5.	20.09.2013	22.09.2013	Asian Senior Men Volleyball Championships at Chenzhou.	Shri. Prabhakaran, Emp. No. 843913, Jr. Clerk, represented India.
6.	20.09.2013	01.10.2013	70 th All India Railway Football Championships at Jabalpur.	ICF Football Team have qualified for the knock-out stage to be held at Patna from 21.10.2013 to 26.10.2013.

October, 2013

Sl. No.	Date		Tournament	Position
	From	To		
1.	01.10.2013	31.10.2013	1 st Division Super League Hockey Tournament at Chennai.	ICF Hockey Team secured Second Place.
2.	12.10.2013	21.10.2013	51 st National Challengers (National-8) Chess Championships at Bhopal.	Shri R.R. Laxman, Emp. No. 839033, Office Supdt. Shri. Praveen Kumar, Emp. No. 849397, Shri P. Karthikeyan Emp. No. 858883, Jr. Clerk, and Shri TJ Suresh Kumar, Emp. No. 800981. Office Supdt. have represented Indian Railways.
3.	08.11.2013	02.12.2013	Indian Railway U-25 C.K. Nayudu Trophy at Varanasi	Shri S. Vignesh, Emp. No. 840886, Helper Gr. II of ICF represented Indian Railways

November, 2013

Sl. No.	Date		Tournament	Position
	From	To		
1.	09.11.2013	15.11.2013	All India Railway Volleyball Championships at Gorakhpur	ICF Volleyball Team secured Second Place.

December, 2013

Sl. No.	Date		Tournament	Position
	From	To		
1.	07.12.2013	08.12.2013	2 nd State Level Powerlifting Championships at Vellore.	(1).Shri. Arun, Emp. No. 858963 secured First Place. (2).Shri. R. Shanmugam, Emp. No. 859000, secured First Place. (3).Shri. Bhagavathi, Emp. No. 808704, secured Third Place.
2.	15.12.2013	22.12.2013	D.S. Rajamanickam Memorial State Level Hockey Championships at Chennai	ICF Hockey Team secured First Place.
3.	26.12.2013	31.12.2013	All India Chess Tournament at Ahmedabad	Shri R.R. Laxman, Emp. No. 839033, Office Supdt. of ICF secured First Position

January, 2014

Sl. No.	Date		Tournament	Position
	From	To		
1.	28.01.2014	29.01.2014	All India Kabaddi Tournament at Maruthakulam (Tirunelveli).	ICF Kabaddi Team secured First Place.
2.	29.01.2014	02.02.2014	State Level Volleyball Tournament at Krishnagiri.	ICF Volleyball Team secured First Place.
3.	11.01.2014	15.01.2014	Senior National Ball Badminton Championships at Khammam.	Shri R. Satheesh, Emp. No. 813618, Tech. Gr. I of ICF represented Indian Railways and secured Second Place..

Sl. No.	Date		Tournament	Position
	From	To		
4.	28.01.2014	30.01.2014	61 st All India Railway Weightlifting Championships.	Shri.S. Mohanasundaram Emp. No. 822821 of ICF secured First Place in 56 kg. category. Shri G. Anbarasu, Emp. No. 843833, Helper Gr.II of ICF secured Second Place in 62 kg. category.

February, 2014

Sl. No.	Date		Tournament	Position
	From	To		
1.	14.02.2014	20.02.2014	34 th National Team Chess Champion-ships at Kanpur	Shri R.R. Laxman, Emp. No. 839033, O.S. Shri P. Karthikeyan, Emp. No. 858883, Jr. Clerk. Shri T.J. Suresh Kumar, Emp. No. 800981, O.S. Manager of Indian Railways represented Indian Railways. Indian Railways secured Third Position.
2.	30.01.2014	04.02.2014	Youth National Volleyball Championships at Rajasthan	Shri R. Manikandan, Emp. No. 859077, Peon of ICF represented Tamil Nadu and secured Third Position.
3.	21.02.2014	13.03.2014	Sr. National Football Championships for Santhosh Trophy at Silliguri.	Shri. Santhakumar, Emp. No. 851403, Helper Gr.II of ICF represented Tamil Nadu. Shri V. Vimal Kumar, Emp. No. 851382, Helper Gr. II of ICF represented Indian Railways and secured Silver Medal

March, 2014.

Sl. No.	Date		Tournament	Position
	From	To		
1.	24.03.2014	26.03.2014	7 th Senior National Body Building Championships at Pune	Shri. Haribabu, Emp. No. 850726, Tech. Gr. II of ICF represented Indian Railways and secured Second Place.
2.	18.03.2014	27.03.2014	19 th International Open Grandmaster's Chess Tournament at Kolkata	Shri R.R. Laxman, Emp. No. 839033, O.S. Shri P. Karthikeyan, Emp. No. 858883, Jr. Clerk. Both represented India.
4.	16.03.2014	23.03.2014	All India Volleyball Tournament at Kannur.	ICF Volleyball Team secured Second Place.
5.	28.03.2014	01.04.2014	Senior National Weightlifting Championships at Nagpur	Shri S. Mohanasundaram Emp. No. 822821, Tech. Gr. III of ICF represented Tamil Nadu.
6.	31.03.2014	11.04.2014	72 nd All India Railway Hockey Championships at Kapurthala	ICF Hockey Team qualified for Quarterfinals

CHAPTER XIII

MEDICAL DEPARTMENT

HEALTH ORGANISATION

Integral Coach Factory Hospital was inaugurated with 50 beds in 1984, Subsequently it has been upgraded to 101 bedded Hospital in 1997. A new Out Patient Department Block was commissioned on 27/03/2010. ICF Hospital caters to the needs of 12330 employees and 9879 Retired Employees with their families. The total population covered (i.e $12330 * 5 + 9879 * 2$) is 81408.

MAN POWER RESOURCES

There are 167 staff both Gazetted and Non-Gazetted staff. There are also 2 House surgeons (Medicine & Surgery). Three Hon. visiting specialists, 1 of whom attending the hospital on all days for two hours (Oncologist) and one (Opthal) is visiting the hospital 4 days a week for two hours per day. There is also provision of visiting consultant specialists in all fields who are called on case to case payment basis.

SERVICES PROVIDED:

- OPD
- Casualty
- IPD [Surgical, Medicine, ENT, Gynaec & Obst, Paed, Ortho, Neuro, Skin,]
- Radiology Department
- Laboratory
- Physiotherapy Department
- Dental
- Endoscopy [Gastroscopy]
- Ultra Sound
- Audiometry
- Pharmacy
- OT – 3
- Minor OT – 1
- Library

IN-PATIENT ADMISSION

The present 101 beds are divided into two General Wards (Male & Female), one Children ward and one surgical ward. The existing Female Ward is accommodating both Maternity cases and Medical cases. A separated postoperative ward is being operated in the surgical block with 11 beds four in the Female side and 6 in the Male side. In the female medical ward 7 semi ICU beds are available to treat critical cases. Apart from this,

3 Postoperative beds are available in the Antenatal ward to take the post Gynaec and post natal cases. There are 3 special cabins for the Gazatted officers and their dependants. Two more small AC side cabins are also available for eligible Group C staff.

BED OCCUPANCY RATIO

The bed occupancy Ratio is 62.88 %.

INJURIES AND ACCIDENTS ON DUTY

Simple : 13	Grievous : 22
Fatal : 0	Total : 35

SURGERIES

OPERATIONS PERFORMED		
1	Major	651
2	Minor	545
3	Trivial	531

OUT-PATIENT ATTENDANCE.

The Out-Patient attendance in this hospital is on an increasing trend. With the full coordination of all doctors and staff of this hospital, high standard is being maintained by giving careful attention to each and every patient. This hospital has to satisfy the need of 12330 employees and their dependents and 9879 RELHS beneficiaries and their dependants. Average OP attendance per day is 741. First Aid Posts are being operated in Shell & Furnishing Divisions of the Factory.

AVERAGE NUMBER OF CERTIFIED CASES AND DAYS OF SICKNESS

Total Number of sick certificates issued	: 2652
Number of certified days	: 56972
Average days/certificate	: 16.6

COST OF MEDICAL AND HEALTH SERVICES

An amount of Rs.12,00,00,000/- has been sanctioned towards the cost of Medicines and other expenses. The cost of Medical and health services is on an increasing trend. The medicines, which are not being purchased regularly, are being purchased through local market as and when prescribed for, but it is maintained at the minimum possible level.

HEALTH AND FAMILY WELFARE ACTIVITIES

- Surface sanitation of the hospital Old and New OPD blocks has been privatized . Sensitive areas like Operation Theatre Laboratory and Special wards are managed with Saffaiwalahs under ICF Hospital, supervised by Chief Matron.
- Colony sanitation, malaria eradication, water testing are maintained by Engineering Department with CHI under their control.
- Food sampling under PFA & Quality Control are being done by HI under the guidance of Medical Department.
- The family welfare department looks after the well being of each employee and his family as a whole. Various kinds of family welfare programs, health awareness programs, etc., are being conducted on frequent intervals. Video shows, presentations, lectures etc., to mark special days such as World No Tobacco Day, World Population Day, etc., as per the guidelines of UN and Government of India.

HIGHLIGHTS OF WORK DONE

- Registration of all Chronic Disease cases is being done and new health Books are being given to them
- Out sourcing lab investigations that are not being done here and arranging monthly bill payment without asking patients to pay & then get reimbursed.
- Procuring equipments to upgrade the facilities in Gynaecology, ENT, Ophthalmology, Surgery, Neurology, and Plastic Surgery.
- Modern Surgical Procedure are being done (Laparoscopic surgeries, Total Knee Replacement, Semi Arthroplasty, FESS etc.). Phaco Surgery (Cataract) is introduced.
- Assistance is being given to patients, who are on long sick leave without getting salary through imprest created from SBF. [Rs.3000/- per month]
- The computerization of the hospital is also on the right track, and taking into account, the transparency as suggested by the Chief Vigilance Commissioner, the ICF Hospital, is giving the details of payments made to its suppliers through its website.
- The existing Radiology department has been modernized with Computerized Radiographic Equipment duly adopting networking facility with latest software.
- The Out Patient Registration is Computerised with bar coding facilities.
- The In -Patient Department is Computerised.
- The Laboratory Department Computerisation is in Progress.
- The Details of Periodical Medical examination reports have been centralized.
- Modern Ultra Sono Gram Machine with latest configuration is introduced in the Medical Department.

PROPOSALS SENT TO RAILWAY BOARD

- Recognition of Appolo Hospital for Neurology and Neuro Surgery cases.
- Recognition of Noble Hospital for managing emergency Head Injury cases.
- Additional staff for developing ICU Services.
- Recognition of RG Stone, Urological Centre for ESWL Procedure.
- Recognition of Private Hospitals for RELHS employees on cashless treatment during emergencies by introducing smart cards

SECURITY BRANCH

Working of Security Branch

The main function of the Security Branch in ICF is to protect and safeguard the movable and immovable Railway properties in Shell and Furnishing factories which are spread over in 7,67,100 Sq.m. of land, Railway properties in all the five ICF Residential Colonies consisting of more than 3107 Officers / staff quarters, a full fledged Technical Training Centre, a 120-Bed Railway Hospital, 4 Schools, Electrical Substations, 3 Auditoriums, 3 Kalyana Mandaps (Marriage Halls), etc., round the clock.

Some of the main duties performed by the Security Branch

- a) Providing enhanced security at all the 5 factory gates by monitoring the entry and exit of the workers in both the Shell and Furnishing factories night and day, besides guarding both 'IN' and 'OUT' Gates of Shell and Furnishing Administrative offices and main porticos.
- b) Providing security at the 2 Vehicle Gates duly monitoring the entry and exit of both Govt. and Private road vehicles and drivers / cleaners / coolies under proper documentation.
- c) Monitoring the movements of Railway materials through different types of gate passes and maintenance of records to this effect.
- d) Round the clock Guarding of Cash Office, Technical Training Centre, ICF Hospital, Main Receiving Stations and other vital installations inside and outside the factories, etc.
- e) Maintaining surveillance over suspected elements.
- f) Keeping the ICF premises free from unauthorized persons and the violators are being brought to book under the provisions of the Railways Act, 1989.
- g) Collecting and collating of crime intelligence and initiating legal action against the employees / outsiders / receivers indulging in clandestine removal of Railway properties under the provisions of the Railway Property (Unlawful Possession) Act, 1966.
- h) Monitoring the activities of various Political / Federations based Trade Unions and category-wise Associations and keep the Administration informed well in advance to maintain Industrial peace and harmony between the Administration and working class.
- i) Ensuring proper structural and procedural security arrangements in and around the factories.

- j) Ensuring strict adherence of laid down procedures during scrap deliveries.
- k) Wall patrolling is being made – both inside and outside the factories.
- l) Providing security during the visits of VVIPs / VIPs, various elections conducted by the Administration, functions organized by the Administration, various agitations / meetings / dharnas resorted by the trade unions, besides during auction sale of scrap material by the stores Department.
- m) Enquiry into the theft of Railway material cases sue – motto and other untoward incidents as and when reported.
- n) Maintaining a good liaison with other law enforcing agencies of both the State and Central Governments, also with the other sister departments of ICF and neighboring Southern Railway.

Vulnerable Areas

ICF being a unit closed by boundary walls all around and other Access Control Systems, regulated through men and materials passes at the gates. RPF prevents any possible clandestine removal of railway property that may occur through the gates when the Workers, contract labourers and Vehicles pass out through the gates. Old Workers Canteen / Fur., which is now being used for stocking MRVC items, CHI office and three SSE/Works, Villivakkam Coaching Yard, Shell Pump House and other vital installations outside the factory are other areas prone to theft. Wall throwing is the another mode of removal of Railway materials for which patrolling by RPF men are being made both inside and outside the factories.

Modus Operandi

An analysis of the cases of yester years reveals that generally some of the Contract laborurers or a very miniscule section of the employees resort to committing thefts by concealing materials on their person either in their apparel or shoes, or tying to their body as also collecting and throwing the materials over the boundary walls. Such persons have been apprehended by RPF staff and cases were registered under the RP (UP) Act, 1966. They generally tend to conceal small railway materials like, copper wires, drill bits, small brass items, etc. Outsiders are mainly contract labourers, who also, while going out tend to conceal materials and try to take clandestinely from the ICF premises.

Crime:

Performance Under The RP (UP) Act, 1966

- a) **No of cases registered / detected**

Year	Cases Registered
2012 – 2013	11
2013 – 2014	14

b) **Value of property stolen / recovered**

Year	Stolen	Recovered
2012 – 2013	Rs.51,508/-	Rs.51,508/-
2013 – 2014	Rs.44,575/-	Rs.44,575/-

C). **Arrests made**

Year	OS	RE	RPF
2012 – 2013	20	-	01
2013 – 2014	19	01	-

Performance Under The Railway Act, 1989

The ICF, being a Production Unit, does not have any open line jurisdiction. Movements of unauthorized elements in ICF area are being watched. The trespassers / Un-authorized hawkers and those causing nuisance are regularly booked under relevant sections of the Railway Act 1989. The details of persons apprehended and the fine amount realized from them through Court are as under:

Year	Person prosecuted	Fine realized
2012 - 2013	1033	Rs.1,97,150/-
2013 - 2014	1242	Rs. 2,39,850/-

Localized Case of theft of Railway materials

Year	No of case reported with value	No of case detected with value
2012 - 2013	08 / Rs. 49,958 /-	08 / Rs. 49,958 /-
2013 - 2014	13 / Rs. 32,707 / -	13 / Rs. 32,707 /-

Gist of the Localized cases

- On 23.04.2013, SSE / P. Way / Fur reported missing of 10 Nos of Pandrol clips valued Rs. 500/-. In this connection, IPF / Fur registered a RP (UP) Crime No. 03 / 2013 and arrested 01 outsider with recovery of the stolen property and thus the case was closed and pursued under RP (UP) Act 1966.
- On 23.04.2013, SSE / P. Way / Fur reported missing of 52 kg Rails from VLK Coaching yard valued Rs. 750/-. In this connection, IPF / Fur registered a localized case, later detected under RP (UP) Crime No. 04 / 2013 and arrested 01 outsider with the recovery of stolen Railway property and thus the case was closed for being pursued under RP (UP) Act.

- c) On 23.04.2013, SSE / P. Way / Fur reported missing of 04 Nos of ACB plates, 02 Nos of Fish plates and 20 Nos of Pandrol clips valued Rs. 4,000/-. In this connection IPF / Fur registered a case under localised head, later, after detection under RP (UP) Crime No. 05 / 2013 and arrested 02 outsiders with recovery of entire stolen Railway property and thus the case was closed.
- d) On 27.04.2013, SSE / P. Way / Fur reported missing of 15 Nos of Pandrol Clips at VLK Coaching yard valued Rs. 750/-. In this connection IPF / Fur registered a localized case and arrested 02 outsiders with recovery of the stolen property and this case is closed.
- e) On 28.04.2013, SSE / P. Way / Fur reported missing of 10 Nos of Pandrol clips valued Rs. 300/-. In this connection IPF / Fur registered in Fur RP (UP) Crime No. 07 / 2013 and arrested 02 outsiders with the recovery of entire stolen Railway property and this case is closed.
- f) On 28.04.2013, SSE / P. Way / Fur reported missing of 15 Nos of Pandrol clips valued Rs. 750/-. In this connection IPF / Fur registered a localized case, later after detection in Fur RP (UP) Crime No. 08 / 2013 and arrested 01 outsider with the recovery of entire stolen Railway property and thus the case was closed.
- g) On 11.05.2013, SSE / Shop – 29 / Elec. / Fur reported missing of 120 sq.mm EBXL – HR Copper cable valued Rs. 3,500/-. In this connection IPF / Fur registered a case under localized head, later detected the case in Fur Post RP (UP) Crime No. 09 / 2013 and arrested 01 outsider with the recovery of entire stolen Railway property and thus the case was closed.
- h) On 03.07.2013, SSE / Shop – 74 / ICF reported missing of street light valued Rs. 1,000/-. In this connection IPF / TTC registered in TTC Post RP (UP) Crime No. 02 / 2013 and arrested 01 outsider with recovery of the stolen property and this case is closed.
- i) On 31.07.2013, SSE / Shop – 74 / ICF reported missing of 01 No of Induction motor 12.5 HP (Kirloskar make) and 06 Nos of Pandrol Clips valued Rs. 17,500/-. In this connection IPF / TTC registered in TTC Post RP (UP) Crime No. 03 / 2013 and arrested 03 outsiders with recovery of the stolen property and thus the case was closed.
- j) On 05.08.2013, SSE / Shop – 74 / ICF reported missing of 02 Nos of detective released USHA make Ceiling Fans heads rod with valued Rs. 800/-. In this connection IPF / TTC registered a case in Crime No. 03 / 2013 and arrested 02 outsiders with recovery of Stolen Railway Property. Thus case is closed.
- k) On 07.08.2013, SSE / Shop – 74 / ICF reported missing of 01 water storage Geyser valued Rs. 1,000/-. In this connection IPF / TTC registered in TTC Post RP (UP) Crime No. 04 / 2013 and arrested 01 outsider with recovery of the stolen property and thus the case was closed.

- l) On 30.06.2013, SSE / Shop – 39 / Elec. / Fur reported missing of 11 Nos of Crimping sockets valued Rs. 1,540/-. In this connection IPF / Fur registered a localized case and in Fur Post RP (UP) Crime No. 10 / 2013 and arrested 01 outsider with recovery of entire stolen property and thus the case was closed.
- m) On 19.10.2013, SSE / Shop – 29 / DEMU / Fur reported missing of 35 sq.mm of about 09 feet length valued Rs. 317/-. In this connection IPF / Fur registered a case under Localized head, later detected in Fur Post RP (UP) Crime No. 11 / 2013 and arrested 01 Railway Employee with the recovery of entire stolen Railway property and thus the case was closed.

Assistance Rendered:

RPF personnel play a vital role in the removal of unauthorized structures from ICF land and helped the Administration to make ICF an encroachment-free area. Similarly, RPF personnel provide elaborate security arrangements during the visits foreign dignitaries to ICF and also for all the Departmental examinations and various Sports Meets conducted by the ICF Administration.

Preventive Checks and Crime:

Detection:

ICF, being a Production Unit, considerable income is being generated every year through the sale of shop refuse. Periodical checks / preventive checks on delivery of scrap materials are being done at all levels on the description of materials, weight of such refuse, etc.

In order to improve effective surveillance, the existing CCTV System was augmented with additional cameras and features such as recording, zooming, tilting, high distance coverage, etc. Further expansions of CCTV system with additional 07 cameras are under installation process.

Consequent to outsourcing of some works, more than 500 contract labourers are entering both in the Shell and Furnishing factories daily. Since they are from different places and keeping in view of the present security scenario, individual permits are being issued to them and to co – relate with their IDs cards issued by their employers.

Fire Fighting:

Ever since the winding up of RPF Fire Wing, all fire fighting arrangements are being done by a private firm under the direct control of Mechanical Department. However all the necessary assistance and co-ordination are extended in fighting fire by the Force in and around ICF.

Periodical review of Security arrangement is being made and improvements are initiated wherever needed. Security audit of vital locations / vulnerable spots was also carried out and deficiencies have been communicated to the in-charge officials for necessary remedial modification.

General:

Crime over ICF is well under control and close co-ordination is being maintained with Local Police & other law enforcing agencies besides maintaining a high level of industrial harmony.

CHAPTER XV

RTI cases of ICF for the period from 01.4.2013 to 31.3.2014

A- Details of RTI cases and Appeals

Particulars	Opening balance as on 1.4.2013	Received during the year (including cases transferred to other PIOs)	No. of cases transferred to other PIOs	Decisions where No. of cases/appeals rejected	Decisions/ information supplied	Total cases disposed off	No. of cases pending as on 31.3.2014
Initial RTI Applications	10	472	20	16	429	462	19
1 st Appeals	2	23	6	1	17	25	0
CIC cases	0	0	0	0	0	0	0

B – Disciplinary action

No. of cases where Disciplinary action taken against any officer	Nil
--	-----

C – Total No. of RTI Officers (Enclose a list with Name & Details)

No. of APIOs designated	No. of PIOs designation	No. of AAs designated
Details enclosed		

D – Cases rejected under section – 8(1) of RTI Act

A	B	C	D	E	F	G	H	I	J	K	9	11	24	Oth ers	Tot al case s
0	0	0	0	2	0	3*	0	0	2	0	0	0	0	11	16

***2 cases dealt both under Clause E & G**

E – Details of CIC Cases

Opening balance as on 1.4.2013	Total CIC case received	Total CIS case disposed	Total CIC cases pending as on 31.3.2014	Decisions / information supplied	No. of cases where Disciplinary action taken against any officer
3	0	3	0	3	0

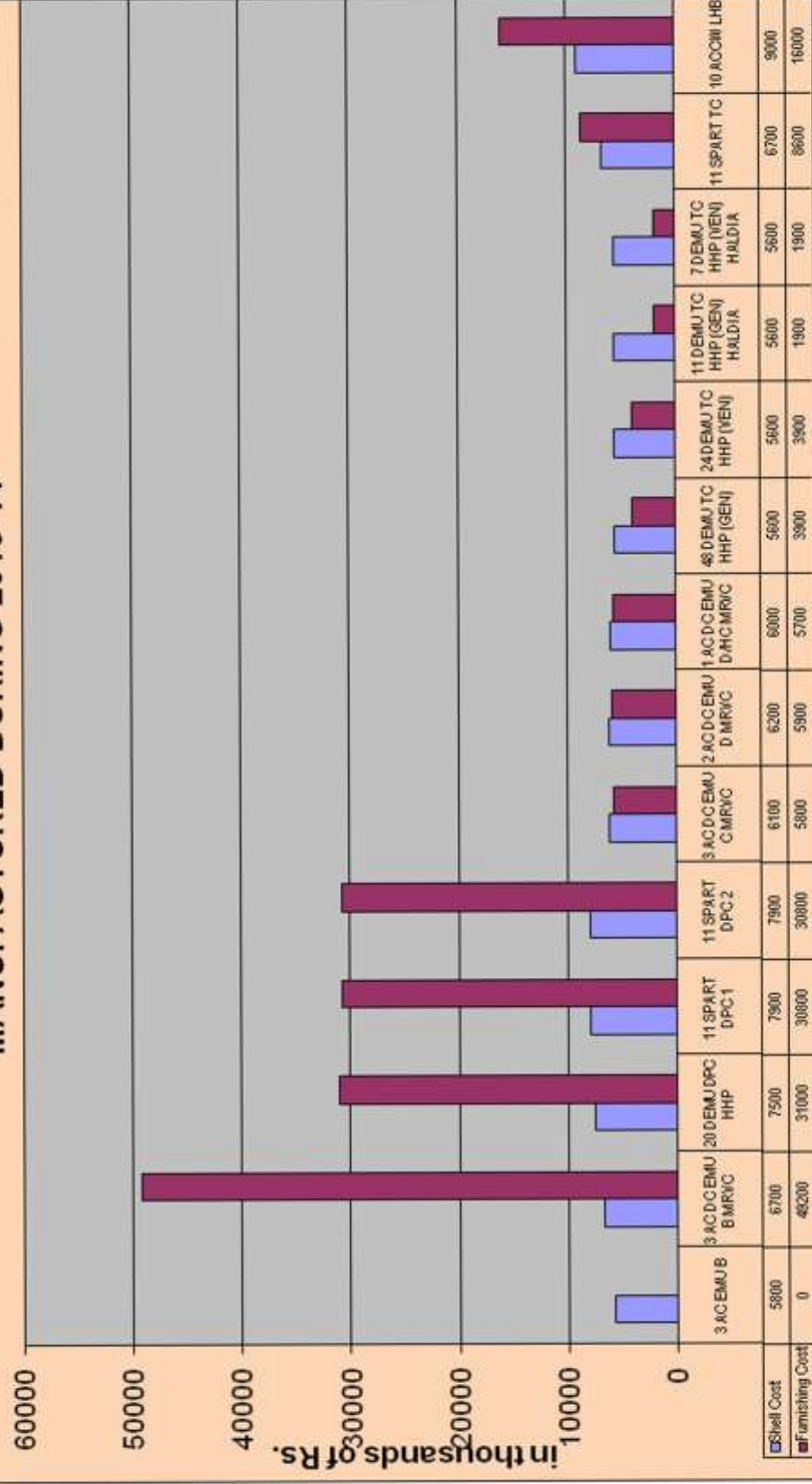
F- Total Amount / Charges received in (Rs.)

Registration Fee (Rs.)	Additional / Documents Fee and any other charges	Penalty received, if any
3080**	534	Nil

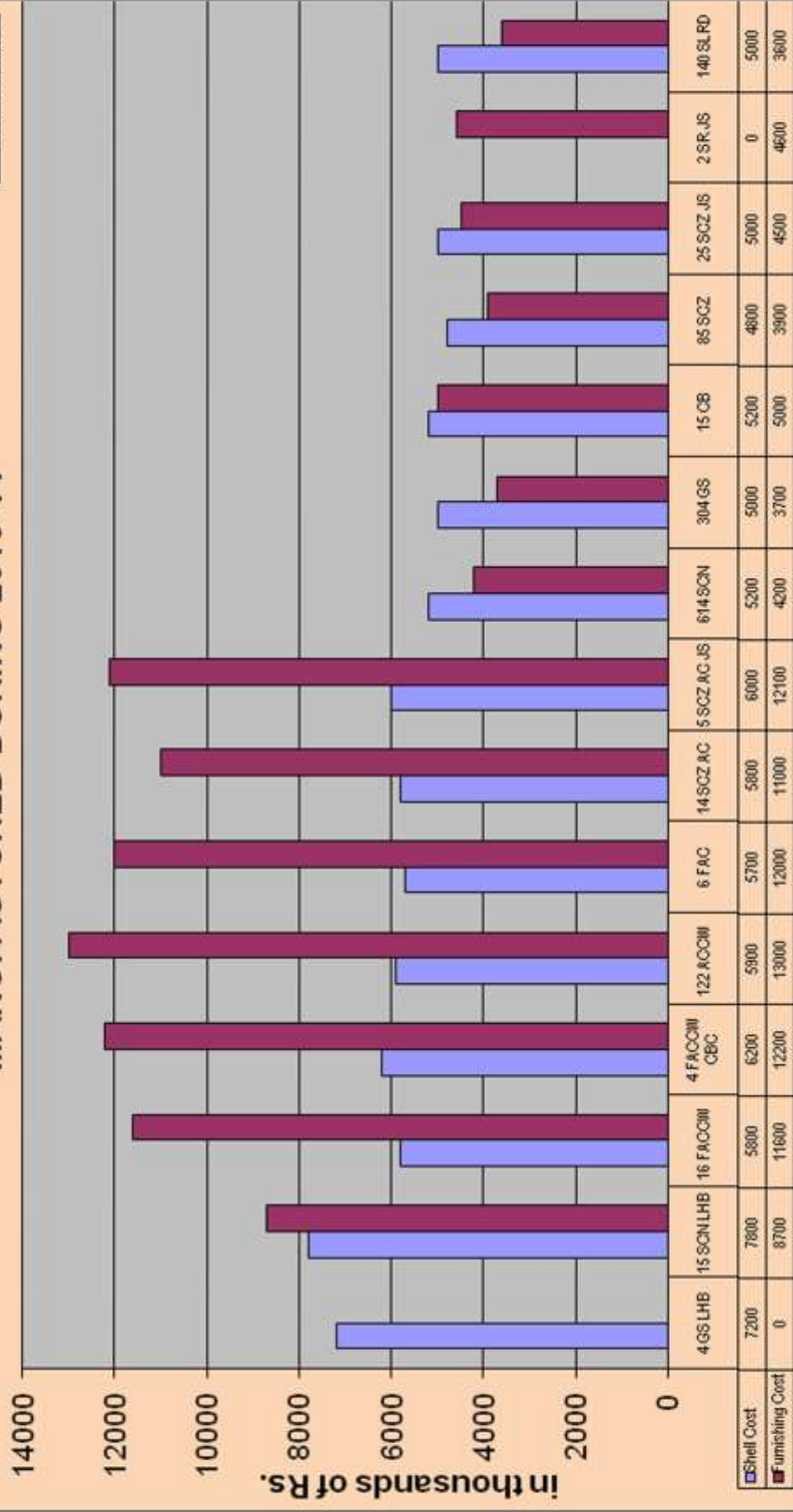
****includes Rs.10/- paid to CVC**

PROVISIONAL COST OF SHELL & FURNISHING COST MANUFACTURED DURING 2013-14

■ Shell Cost
■ Furnishing Cost



**PROVISIONAL COST OF SHELL & FURNISHING COST
MANUFACTURED DURING 2013-14**



INTEGRAL COACH FACTORY, CHENNAI - 600 038							
MANUFACTURING ACCOUNT FOR THE YEAR 2013-14							
DEBITS				CREDITS			
SL No	PARTICULARS	2012-13	2013-14	SL No	PARTICULARS	2012-13	2013-14
1	TO OPENING BALANCE			1	BY TRANSFER TO RAILWAYS		
	a.) Work in Progress	1174187043.32	1336173399.32		a.) Supply of Coach Shells	7853500000.00	8845100000.00
	b.) Development Suspense	-2507260.00	-28346662.00		b.) Furnishing of Coaches	12532400000.00	10197400000.00
2	TO LABOUR				c.) Adjustment - Cost Report	285500000.00	166800000.00
	a.) Direct Labour - Workshops	2016602319.67	2191620797.62		d.) Metro - KOLKATA	628280000.00	0.00
	b.) Indirect Labour - Workshops	1847149812.04	2071055476.89		e.) Miscellaneous Jobs - Other Rls.	147601377.00	133682755.00
	c.) Salaries and Allowances of Admn and General Departments Outside the Workshops	1408022241.89	1461085785.59		f.) RDSO	0.00	0.00
3	TO STORES			2	BY CAPITAL STORES SUSPENSE		
	a.) Direct Stores	14209392480.11	11986311814.16		a.) Manufactured Materials	2388508.00	148910.00
	b.) Indirect Stores	395531585.89	-37735205.35		b.) Returned to Stores	211750973.00	234638872.00
	c.) Freight and Incidental Charges	269162614.00	207361728.00	3	BY CAPITAL WORKS		
4	TO DIRECT CHARGES				a.) Plant & Machinery	0.00	0.00
	Erection by Contract	122641958.00	118888399.00		b.) DRF Works	0.00	0.00
5	TO INDIRECT CHARGES			4	BY WORK DONE ON DEPOSIT		
	a.) Contribution to DRF	180000000.00	180000000.00		ACCOUNT	201420635.00	45450000.00
	b.) Contribution to PF	0.00	0.00	5	BY EXPORT ORDERS	336125358.00	1971829.00
	c.) Appropriation to Pension Fund	860997000.00	860997000.00	6	BY DEVELOPMENT SUSPENSE	25839402.00	-1348320.00
6	TO OTHER CHARGES			7	BY CLOSING BALANCE (A+B)		
	a.) Electricity Charges	37978350.00	48293444.00		A.) Work in Progress	1336173399.32	1594824678.32
	b.) Water Charges	41802812.00	44442738.00		B.) Development Suspense Balance	-28346662.00	-26998342.00
	c.) New-Minor Works, Addition & Replacement	105462281.79	67422349.09				
	d.) Miscellaneous Charges	1041678182.00	1369145451.00				
	e.) Receipts on House Rent, Water and Electricity, Others	-175468430.39	-275996333.00				
	GRAND TOTAL	23532632990.32	21600720382.32		GRAND TOTAL	23532632990.32	21600720382.32

Note:

1.) This Manufacturing Account does not include a sum of Rs. 34,94,66,941/- For 2013-14 representing Dividend Payable to General Revenues in respect of Capital Outlay in this Factory. However, the same is included in the Consolidated Profit & Loss Account of Indian Government Railways

[illegible]



LIABILITIES						ASSETS					
Sl.No.	Particulars	As on 31st March 2013		As on 31st March 2014		Sl.No.	Particulars	As on 31st March 2013		As on 31st March 2014	
		Detail	Amount	Detail	Amount			Detail	Amount	Detail	Amount
xxiv	Group Insurance Scheme										
xiv.	Election Commission - Ansum Election.										
xx.	Repayment of Additional DA Surplus Account.										
xxi.	Repayment of Additional Wages Surplus Account.										
xxii.	Fine Forfeiture Account										
xxiii.	Payment on account of SRPF/SFF in advance of Cash Credits to be Recovered from Pakistan.										
xxiv.	Payment on behalf of Central Claims Organisation - Pension and Provident Fund.										
xxv.	Discreet Court Deposits										
xxvi.	Other Transactions										
xxvii.	Unclaimed Provident Fund	415514	1591307318	225621	1033015971						
c.	Demand Payable	0	0	0	0						
3	i.	Depreciation Reserve Fund	-1814335619	-2003415037							
	ii.	Railway Development Fund	0	0							
	iii.	Railway Pension Fund	6973027954	7734554857							
	iv.	Accident Compensation Safety and Passenger Amenities Fund	0	0							
	v.	Railway Safety Fund	0	0							
	vi.	Special Railway Safety Fund	0	0							
			5158692335		5731139820						
4											
	i.	Revenue Reserve Fund									
	ii.	Cash Balance Investment									
5	i.	Balance due to Central Government for Loans and Advances to Railway Employees etc (vide item 3(a) (I) P&A, courts.	50966157	38992500							

LIABILITIES				ASSETS			
SLNo.	Particulars	As on 31st March 2013		SLNo.	Particulars	As on 31st March 2014	
		Detail	Amount			Detail	Amount
ii	Other Advances:(vide item 3(a)(ii) per contra.)	0				0	
iii	Advances to Port and Customs authorities:(vide item 3(a)(iii) per contra)	883				883	
iv	Advance to Railwaymen's Consumer Co-operative societies (vide item 3(a)(iv) per contra.)	0				0	
v	Advance to the family of the deceased who died in service (vide item 3(a)(v) per contra)	321603	51288643			366508	39359891
6	Balance in transfer						
7	Balance of amount in account with Government		888290				816310
8	Profit						
	TOTAL		1531293163		TOTAL		16610354505

Note: The Figures shown in the Assets Side - Item 3(a)(ii) - Other Departmental Advances comprise the figures of Advance of Pay, TA on Transfer Account and Ceremonial Occasion.

CERTIFIED THAT THE BALANCE SHOWN AGAINST EACH HEAD OF ACCOUNT IN THE BALANCE SHEET AGREES WITH THOSE REFLECTED IN THE ACCOUNT CURRENT AND THE DEBT HEAD REPORT".

S. V. Vijayaraghavan

(S. VIJAYARAGHAVAN)
FINANCIAL ADVISER AND
CHIEF ACCOUNTS OFFICER

Ashok K. Agarwal

(ASHOK K. AGARWAL)
GENERAL MANAGER/ICF

**CERTIFICATE OF THE PRINCIPAL DIRECTOR OF AUDIT ON THE
BALANCE SHEET OF INTEGRAL COACH FACTORY: CHENNAI.**

CERTIFICATE

It is certified that these foregoing Accounts and Balance Sheet have been examined under my direction. These accounts are the responsibility of the Financial Advisor and Chief Accounts Officer, Integral Coach Factory, Chennai and General Manager, Integral Coach Factory, Chennai. Our responsibility is to express an opinion on these accounts based on our audit.

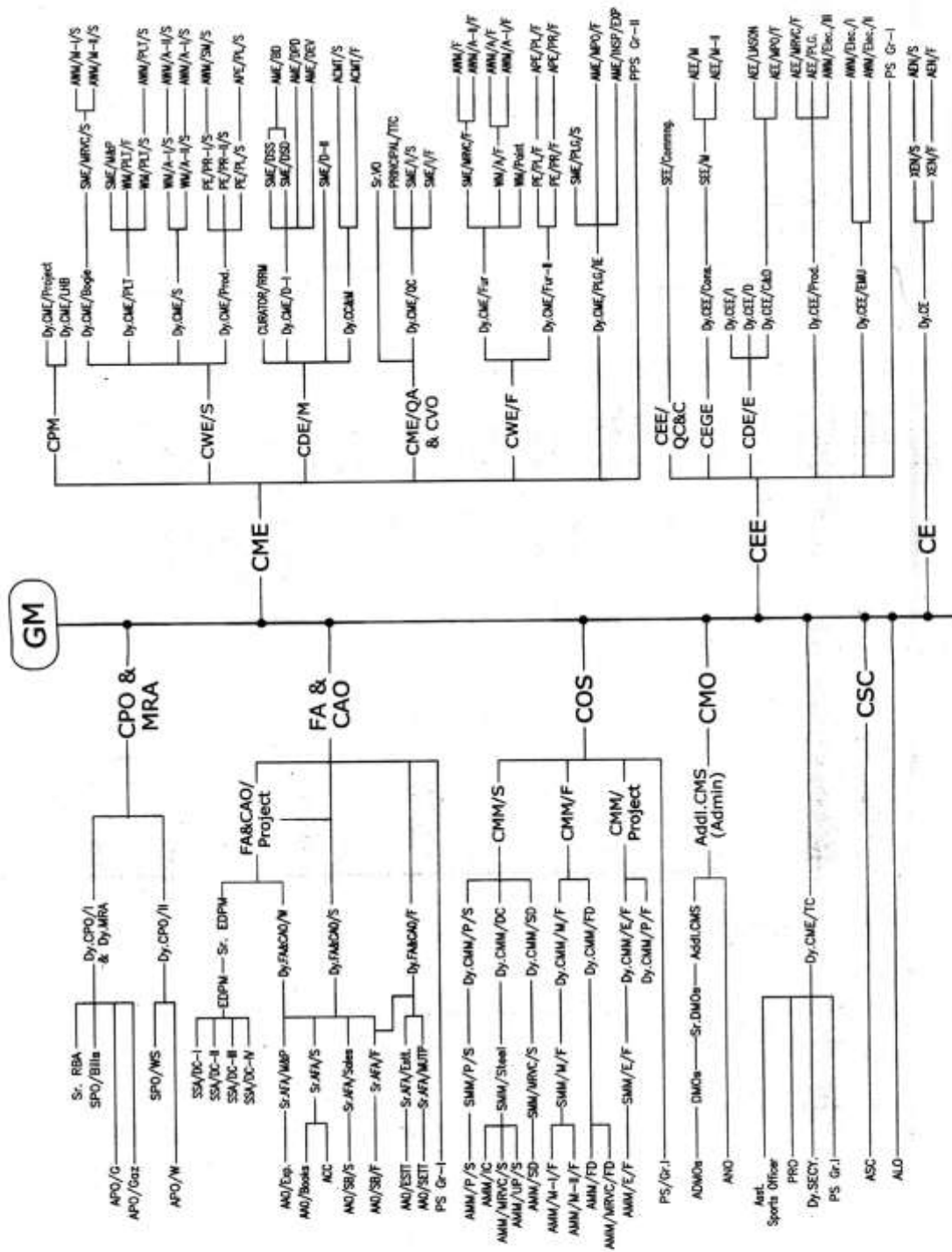
We conducted our audit in accordance with the auditing standards generally accepted in India. Those standards require that we plan and perform the audit to obtain reasonable assurance whether the accounts are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the accounts. An audit also includes assessing the accounting principles used and significant estimates made, as well as evaluating the overall presentation of accounts. We believe that our audit provides a reasonable basis for our opinion.

On the basis of the information and explanations that my officers required and have obtained, and according to the best of my information as a result of test audit of the accounts, I certify that the accounts and Balance Sheet exhibit a true and fair view of the state of affairs of Integral Coach Factory, Chennai, subject to the observations in the Reports of the Comptroller and Auditor General of India on Indian Railways for the year ended 31st March 2014.


(G. SUDHARMINI)

PRINCIPAL DIRECTOR OF AUDIT

ON 31-03-2014





ICF – Milestones and Achievements

1	First	Third Class Shell production	2 nd October 1955	55	First	Taj Express	1987-88
2	First	Indigenous shell produced	14 th August 1956	56	First	Shatabdi Express	1989-90
3	First	Temporary Furnishing Capacity created	1956-57	57	First	MG Palace on Wheels, 20 Coaches, 5 types	July 1991
4	First	Full Production Capacity achieved	1958-59	58	First	Conventional Coaches with Air Brake	November 1993
5	First	Second Shift working introduced	April 1959	59	First	AC MEMU Motor Coach	March 1994
6	First	Incentive system of payment introduced	January 1960	60	First	Demu Coach	March 1994
7	First	MG First Class Coach	1960-61	61	Export	15 AC Coaches of 2 types to Vietnam	January 1995
8	First	1000 th Shell, fully furnished and produced	1962-63	62	First	BG Palace on Wheels, 20 Coaches, 5 types	May 1995
9	First	Technical collaboration concluded	27 th May 1961	63	First	Biological Toilet Implemented	May 1995
10	First	Fully furnished third class sleeper coach	October 1961	64	First	OHE Inspection Car (DTC)	November 1995
11	First	Furnishing division inaugurated	2 nd October 1962	65	First	Roof Mounted BG ACW Coach	January 1996
12	First	AC EMU A produced	September 1962	66	First	DHMU Coach	March 1996
13	First	AC EMU C produced	January 1963	67	Export	27 Coaches to Tanzania	July 1997
14	First	AC EMU D produced	February 1963	68	First	DHTC Shell for SAN Engineering	March 1998
15	First	AC EMU Motor coach with Hitachi equipment	May 1963	69	First	AC Chair Car Roof Mounted	1998-99
16	First	AC EMU Motor coach with ABE equipment	January 1964	70	First	ARMU DTC AC coach	March 1999
17	First	Meter Gauge Third class coach	December 1963	71	First	Stainless Steel AC coach	1999-2000
18	First	MG Diesel Rail Car	1964-65	72	First	DEMU High Horse Power	2000-01
19	First	MG EMU Motor coach	1965-66	73	First	AC DC EMU Motor Coach	2001-02
20	First	Inauguration of Computer center	November 1966	74	First	AC DC EMU Trailer Coaches	2001-02
21	First	Export of bogies to Thailand	April 1967	75	First	Jan Shatabdi Coach	2001-02
22	First	AC Express	1966-67	76	First	Coaches fitted with Modular Toilets	2001-02
23	Export	Bogies to Burma	1968-69	77	First	New Generation EMUs for AP Metro	2002-03
24	First	AC Pantry car	1968-69	78	First	Deccan Odyssey Coaches for MTDC	2002-03
25	First	Rajdhani Express	November 1968	79	First	CBC-fitted coaches for Praying Raj Express	2003-04
26	First	Power Car (WLRRM)	November 1968	80	First	Fire retardant coaches	2003-04
27	First	DC EMU Motor coach	1969-70	81	First	HHP DMU with aerodynamic front End	2003-04
28	Export	MG bogies to Thailand	1970	82	First	Prototype Coaches for MRVC	2004-05
29	Export	113 Coaches to Thailand	June 1971	83	Export	MG AC Shell to Malaysia	2004-05
30	Export	6 coaches of 2 types to Zambia	May 1973	84	First	SPURT Car	2004-05
31	First	AC Composite coach (FACCW)	1972-73	85	First	Jet Deflector crane car	2005-06
32	First	BG AC 2 Tier Sleeper	December 1974	86	First	DEMU for Jammu & Kashmir Region	2006-07
33	Export	30 coaches of 2 types to Zambia	February 1975	87	First	AC Chair Cars for Garib Rath Train	2006-07
34	Export	Bogies to Taiwan	1975	88	Export	Cape Gauge Coaches to Angola	2006-07
35	First	AC Power Car (WLRRM AC)	1975-76	89	First	AC/DC EMUs with Siemens Electrics	2007-08
36	First	Second Class Day Coach (SDC)	1975-76	90	First	Luxury Tourist Coaches for KSTDC	2007-08
37	First	DC EMU high capacity Motor coach	January 1976	91	First	Coaches for Lifeline Express	2007-08
38	Export	17 coaches to Tanzania	August 1976	92	First	LHP Stainless Steel Coach Design	2008-09
39	First	BG Double Decker Coach	1976-77	93	First	Self-Propelled Accident Relief Train	2009-10
40	First	Manufacture of Vaagai Express	15 th August 1977	94	First	Integrated Communication Coach	2009-10
41	First	25 Metro (70 Feet) SCN Coach	1978-79	95	First	Manarajas' Express Coaches for RRTC	2009-10
42	First	Military Ward car	1978-79	96	First	Prototype A/C Rakes for Kollata Metro	2010-11
43	First	Military Ward cum Dining Car	1978-79	97	First	ICF's Production Crossed 1500 Coach Mark	2010-11
44	Export	30 coach of 2 types to Philippines	1978-79	98	First	Stainless Steel DEMU Rakes for Sri Lanka	2010-11
45	Export	20 coaches to Uganda	February 1979	99	First	Emission test car	2011-12
46	First	MG Milk van Bogie	4 th July 1979	100	First	1600 HP DEMU	2012-13
47	First	Military Kitchen Car	1979-80	101	First	LHB AC Executive Chair Car	2012-13
48	Export	50 Coaches to Vietnam	April 1980	102	First	LHB Power Car	2012-13
49	Export	32 Coaches to Nigeria	1981-82	103	First	LHB AC Chair Car	2012-13
50	First	MG ACW coach	1981-82	104	First	Mumbai Urban Transport Project Rake	2013-14
51	First	Metro Coach for Calcutta Sub-urban	1981-82	105	First	LHB 3-Tier Sleeper Coach	2013-14
52	Export	9 Coaches to Bangladesh	1984-85	106	First	Mumbai Urban Transport Project Rake	2013-14
53	Export	15 Coaches to Mozambique	1984-85	107	First	LHB General Second Class Coach	2013-14
54	Export	61 Coaches to Bangladesh	July 1986	108	First	LHB 3-Tier Sleeper Coach	2013-14

Shell Production during 1955-56 to 1969-70																
SHELL TYPE \ YEAR-->	55-56	56-57	57-58	58-59	59-60	60-61	61-62	62-63	63-64	64-65	65-66	66-67	67-68	68-69	69-70	
BROAD GAUGE : MOTOR COACHES																
AC EMU B								1	3	10	22	28	44	33	17	
DC EMU B														1	8	
WIDE BODIED TRAILERS																
DC EMU C														1	14	
AC EMU C								27	91	30	30	10	13			
AC EMU A & D								28	89	47	50	46	62	64	3	
DC EMU D														1	12	
AC COACHES																
WFAC												5		2		
WCBAC														2		
WCDNAC												6				
WTAC												21		3		
POWER CARS																
WLRRM												8		4		
CONVENTIONAL COACHES																
FIRST & THIRD CLASS								405	39						6	
FIRST, SEC. & THIRD CLASS													37			
FCZ												4				
WTCN												4	95	215	6	
SECOND & THIRD CLASS	12	88	222	380	345										60	
SECOND & THIRD CLASS (CONV)						115										
FIRST & SECOND CLASS															60	
FIRST CLASS						156	335	126				78		80	33	
TLR / SLR				1	100	20	222	13	142							
TCW					2	148						4				
SCN												46	4			
THIRD CLASS											95	214	84		196	
CTT										16						
CT										23						
TLR (C)						144	41									
SPECIAL COACHES																
CT											3					
DYNAMOMETER CAR (RK)												1				
DR											24					
TOURIST KITCHEN CAR (CK)												6				
ROL													1			
CDN											20					
DENING CAR (CD)												2				
RZ/RA											19		27			
METRE GAUGE																
EMU MC											19	26				
CL											8					
WC											9					
RZ										1				1	2	
PLV											76	69				
CD											1					
RDSO														2		
YRD										2			2	8		
EMU OT											38					
EMU DT											19					
TCG													100			
FIRST, SEC. & THIRD CLASS													44			
THIRD / SECOND / GS									224	263	90		14	147		
TLR														36	202	
FIRST / THIRD													22			
FIRST & SECOND CLASS									1			16	33	40		
SECOND & THIRD CLASS															30	
FIRST CLASS									16	90	117	36	60			
TCN2 / SCN2										100						
TCN2 / SCN3										50						
TOTAL	12	88	222	381	447	583	598	600	605	632	640	630	642	640	649	

Shell Production during 1970-71 to 1979-80											
SHELL TYPE \ YEAR --	70-71	71-72	72-73	73-74	74-75	75-76	76-77	77-78	78-79	79-80	Total
BROAD GAUGE : MOTOR COACHES											
DC EMU B	14	10	4	35	32	17	10				122
AC EMU B	13	12	21				12	18	32	27	135
WIDE BODIED TRAILERS											
AC EMU C								27	12	30	69
DC EMU D		10	22	30	30	17					109
DC EMU C		10	22	29	32	18					111
AC EMU A & D	14							54	24	60	152
AC COACHES											
ACCW					10		22	17	36	18	103
WTAC	7										7
WCBAC	2										2
PARTIAL AC COACH						11	14				25
WFAC	2		6	19						17	44
WF ACCW			2								2
POWER CARS											
AC WLRRM						2					2
WLRRM	3			3		7					13
CONVENTIONAL COACHES											
SDC						53					53
SCNLR									50		50
SECOND CLASS						205	41				246
FCZ			3	7	27		1				38
FSCN								78			78
TLR / SLR	66	10							50		126
SCN							91	250	309	377	1027
WCB							47			10	57
WTCN				367	143						510
SCW		45									45
TDC			19		106						125
FIRST CLASS	96	79	53	32		54	142				456
FIRST & THIRD CLASS	24	27		147	66						264
THIRD CLASS	130	112	468	78	60						848
SPECIAL COACHES											
MX/ML		4								2	6
RZ	2	2		3							7
MRA								7			7
MRD								1			1
MSA							4				4
DOUBLE DECKER						1		12		24	37
METRE GAUGE											
EMU DT					24			6			30
EMU OT					24			12			36
THIRD CLASS						133	65				198
TLR	84									50	134
FIRST & THIRD CLASS							88	2			90
FIRST CLASS		83	45				26	19			173
TCN								138	187	47	372
CB							7				7
ML							2	3			5
THIRD / SECOND / G	136	153									289
SECOND&THIRD CL	67										67
EXPORT											
EXPORT		113	6		30	17			50	50	266
TOTAL	660	670	671	750	584	535	572	644	750	712	6548

Shell Production during 1980-81 to 1989-90											
SHELL TYPE \ YEAR	80-81	81-82	82-83	83-84	84-85	85-86	86-87	87-88	88-89	89-90	Total
BROAD GAUGE : MOTOR COACHES											
AC EMU B	20	37	32	12	6	16	14		33	40	210
DC EMU B					21	5	12	6			44
METRO DMC	4	4		6		4		4		2	24
METRO NDMC	2	2		3		14	4	13		4	42
METRO BATTERY								3			3
WIDE BODIED TRAILERS											
AC EMU A & D	56	44	44						12	48	204
AC EMU C	24	24							10	54	112
DC EMU C						26		18			44
DC EMU D						26		18			44
OTHER TRAILERS											
METRO TRAILER CO.	2	2		3		6		7		4	24
AC COACH SHELLS											
SCZAC				3		6	6	23		24	62
WFAC		24	5	15					4	6	54
ACCW	49	40	21	45	73	34	54	6	54	41	417
WG FACCW										12	12
WGFZAC									3		3
RA AC										2	2
WCBAC		1	7								8
WTAC	20	7	25	3							55
POWER CARS											
WLRRMAC	2		2					5			9
WLRRM	3										3
CONVENTIONAL COACH SHELLS											
FIRST CLASS										74	74
WCB	28	18				10	10	20		30	116
SCN	309	50	100	220	60	90	172	235	223	173	1632
SECOND CLASS			317	487	589	587	520	263	236	59	3058
SCNLR	32	19									51
SDC		277	105		30						412
SPECIAL COACH SHELLS											
RA / RZ	1		2	3					15	28	49
DOUBLE DECKER				1	11	12					24
METRE GAUGE : ALL TYPES											
EMU MC									6		6
EMU OT			22		19						41
SCZAC										3	3
AC COMPOSITE								5	15		20
ACCW		10						25	5	22	62
THIRD/SECOND								185	45	227	457
TCN / SCN								11	214	55	280
TLR / SLR										50	50
THIRD CLASS		44									44
FIRST CLASS			4								4
FCZ	3	2									5
SCZLR	5	3	1								9
SCZCH	3	2	2								7
SCZ	13	6	27								46
TCN	96	20	26								142
SCZR											0
RA		1	2								3
CB			15								15
TLR	50	51	11								112
EXPORT											
EXPORT		32		8	16						56
BDR III CLASS							61				61
TOTAL	722	720	770	809	825	836	853	847	875	958	8215

Shell Production during 1990-91 to 1999-2000

SHELL TYPE \ YEAR	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-00	Total
BROAD GAUGE : MOTOR COACHES											
AC EMU B		29	50	25	25	34	55	52	57	43	368
DC EMU B			9	30	18	31				4	92
AC MEMU DMC				3	40	33	28	10	13	5	132
DMU DPC OB (DEMO)				3	8	5	17	20	14	20	87
DMU DPC US (DHMU)						1	2		6		9
METRO DRIVING M	12										12
METRO NDMC	30										30
OHE CAR						4	3	17		12	36
ARTV									5	5	10
WIDE BODIED TRAILERS											
AC EMU D	40	45	55	45		55	75	25	25	20	359
AC EMU C	28	52	48	40	57	55	48	88	92	52	500
DC EMU C			10	30	18	31				20	109
DC EMU D			10	30	18	31				7	96
OTHER TRAILERS											
AC MEMU TC				2	85	120	80	30	39		356
ARMV DTC										5	5
METRO TRAILER CO	12										12
DMU DTC OB				1	8	9		25	20	20	83
DMU TC OB				5	15		42	25	20	22	129
DMU TC US							2				2
AC COACH SHELLS											
SCZAC	31	26	20	30							107
WG SCZ AC RM									10	20	30
WCBAC			10	10	5			9		4	38
WFAC			6					10		4	20
ACCW RM						5	20	34	70	58	187
ACCW	27	36	49	41	63	37	11				264
WGFACCW				16	16	38	9	13	20	17	129
AC SPECIAL											
ARMV DTC AC									5		5
WPSAC (POW)					1						1
WPC TAC						14					14
WPC DAC						2					2
WPC ILAC						1					1
KA AC							4				4
MIL ACCW						4	5				9
POWER CARS											
POW WPSRCM					2						2
WLRMAC	9		13	4	28		8	7	11	4	84
MIG WPSRCM(POW)		2				1					2
CONVENTIONAL COACH SHELLS											
FIRST CLASS	156										156
SDC	88	100	153	225	20	85		134	107	45	957
WCB	52			50	30	31	58	59	40	10	330
SCN					108	45	161	201	208	316	1035
SECOND CLASS / GS		170	305	424	231	196	325	203	295	306	2455
SPECIAL COACH SHELLS											
RDSO STAFF CAR			1								1
KA / RZ							17				17
RDSO FUEL TEST CAR			1								1
POW WPSRS						1					1
MROML			13								13
METRE GAUGE : ALL TYPES											
EMU MC	4	15									19
MIG WPC TAC(POW)	1	13									14
MIG WPC DAC(POW)		2									2
MIG WPC ILAC(POW)		1									1
MIG WPSRS(POW)		1									1
THIRD/SECOND	354	475	224								1053
TCN / SCN	162										162
SCZ / SDC	10										10
TLR / SLR		50	80								130
EXPORT											
VNR MG AC					9	1					10
VNR MG 3T					5						5
IZ								27			27
TOTAL:											
TOTAL BG COACHES	485	460	733	1012	792	866	970	960	1055	1019	8352
TOTAL MG COACHES	531	557	304	0	0	0	0	0	0	0	1392
EXPORT	0	0	0	0	14	1	0	27	0	0	42
GRAND TOTAL :	1016	1017	1037	1012	806	867	970	987	1055	1019	9786

Shell Production during 2000-01 to 2009-10											
SHELL TYPE / YEAR	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Total
BROAD GAUGE - MOTOR COACHES											
AC EMU B	18		5	9	27	33	45	30	9	14	190
ACDC EMU B	3	43		10	5	17	6				84
ACDC EMU B MRVC							4	32	152	164	352
AC MEMU DMC	10		21								31
AC EMU B (MMTS)			18	8							26
KOL. METRO MC										12	12
DMU DPC OB (DEMU)	15										15
DEMU DPC HHP	5	15	7	9	10	8	7	8	14	22	103
DEMU DPC HHP J&K							5	1			6
DEMU DPC 1600 HP											0
DETC OB	4	8	7	14	5	10	4	14			66
DETC US	1	2									3
SPART DPC										2	2
ARTV	3										3
WIDE BODIED TRAILERS											
AC EMU D	10		7	6	18	20	35	9	4	10	119
AC EMU C	26		6	5	24	40	49	38	11	21	220
AC EMU A					12	10	18				40
AC EMU C (MMTS)			22	8							30
AC EMU D (MMTS)			21	8							29
DC EMU C	21										21
DC EMU D	21										21
DC EMU D HC	6										6
KOL. METRO TC										4	4
ACDC EMU C	3	48	1	18	10	14	2				96
ACDC EMU C MRVC							4	28	156	148	336
ACDC EMU D	2	14		5	5	10	3				39
ACDC EMU D MRVC							2	14	78	82	176
ACDC EMU D HC	1	14		4	6	4					29
ACDC EMU D HC MRVC							2	14	78	74	168
OTHER TRAILERS											
AC MEMU TC	30		63								93
DMU DTC	12										12
DMU TC	18										18
DMU TC HHP	15	45	21	27	30	33	12	24	24	42	273
DMU TC 1 HHP J&K							5				5
DMU TC 2 HHP J&K							5				5
DMU DTC HHP J&K							5				5
DEMU TC 1600 HP GEN											0
DEMU TC 1600 HP VEN											0
SPART TC										1	1
ARMV DTC	3										3
AC COACH SHELLS											
WG SCZ AC LHB	1										1
WG SCZ AC	15	18	10	16	10	2	18	6	10	23	120
EOG SCZ AC (G R)							20	32			52
WG SCZ AC JS		3	17				5	6	2	10	43
EOG WCB AC	5	2									7
EOG W PAC	3	2	8	10	15	4	9	28	12	10	101
ACCW	42	63	50	47	96	64	45	46	62	51	566
EOG ACCW LHB									4	6	10
WG FACCW	15	15	12	15	34	17	15	20	10	25	170
SG ACCN											0
S WGACCW										2	2
RA AC						1					1
POWER CARS											
WLRGMAC	5	3								6	14
CONVENTIONAL COACH SHELLS											
SCZ	38	60	28	127	67		104	230	110	140	904
SCZ JS		23	127				16	10	8	30	214
WCB	10	10	15	18	54	35	20	15	20	20	217
SCN	313	401	172	359	324	421	312	59	144	165	2670
GS	332	265	202	247	207	312	261	471	325	333	2953
SR/SLRD				10			88	51	47		196
SLR/SLRD			59	80	130	91	75	26	37	33	531
SLR JS		6	34				6		2	5	53
S WGS											0
S WGSN											0
S SLRD											0
RA						1					1
EXPORT COACH SHELLS											
MO SS SHELLS TO MALAYSIA					11						11
CO COACH SHELLS TO ANGOLA						17	24	15			56
BO COACH SHELLS TO SRI LANKA										1	1
SPECIAL COACH SHELLS											
JET DEFLECTOR CRANE CAR						4				3	12
INTEGRATED COMMUNICATION COACH										7	7
MILITARY KITCHEN CAR						14					14
MILAMOD. MIL. WARD CAR									5	3	8
DECCAN ODYSSEY			21								21
KSTDC							10	8			18
RTDC								22			22
IRCTC										23	23
SPORT CAR					2						2
EMISSION TEST CAR											0
TOTAL	1006	1060	954	1060	1102	1182	1241	1257	1324	1497	11683

Shell Production during 2010-11 to 2013-14					
SHELL TYPE \ YEAR	2010-11	2011-12	2012-13	2013-14	TOTAL
MOTOR COACHES					
AC EMU B	30	120	97	3	250
AC EMU B MUTP				8	8
AC EMU C MUTP				5	5
AC EMU D MUTP				2	2
AC EMU DHC MUTP				4	4
AC/DC EMU B MRVC	137	12		3	152
AC EMU B (MMTS)	12				12
KOL. METRO MC	14	30	22		66
DEMU DPC HHP	23	28	30	27	108
DEMU HHP TC				88	88
DEMU DPC HHP (J&K)		8	4		12
DEMU HHP TC (HALDIA)				18	18
DEMU DPC HHP (HALDIA)			4		4
DEMU DPD 1600 HP		2			2
START DPC 1			5	15	20
START DPC 2			5	15	20
WIDE BODIES TRAILERS					
AC EMU D	20	86	52		158
AC EMU D HC			20		20
AC EMU C	40	154	94		288
AC EMU A			14		14
AC EMU C (MMTS)	12				12
AC EMU D (MMTS)	12				12
AC EMU C (MUTP-II)			3		3
AC EMU D (MUPT-II)			2		2
AC EMU D HC (MUTP-II)					
KOL. METRO TC	4	10	8	3	25
AC/DC EMU C MRVC	162	3		2	167
AC/DC EMU D MRVC	72	10			82
AC/DC EMU HC MRVC	73	2		1	76
OTHER TRAILERS					
DMU TC HHP	70	83	72		392
DMU TC HHP (J&K)		24	12		36
DMU TC HHP (HALDIA)			12		12
DEMU TC 1600 HP		6	2		8
SPART TC			5		5
AC COACH SHELLS					
WG SCZ AC	20	20	15		55
WG SCZ AC JS	5		5		10
EOG W FAC	10	20			30
ACCW	80	105	140		325
LWACW			3	7	10
WGFACW	20	25	23		68
LS				4	4
LWSCN				15	15
SG FACW				16	16
SG ACCW	10		35	130	175
SG ACCN				87	87
SG FAC				10	10
SG SCZAC				20	20
SG SCZAC JS				5	5
SG FACW CBS				2	2
S WGACW	4				4
CONVENTIONAL COACHES SHELLS					
SG GSCN				621	621
SG GSCZ				85	85
SG GS				260	260
SG SLR /SG SLR D				133	133
SG CB				15	15
SG GSCZ JS				25	25
SCZ	100	90	45		235
SCZ JS	20				20
CB	20	15	15		50
SCN	136	172	174		482
GS	279	339	546		1164
SR/SRD	12				12
SLR/SLRD	85	85	117		287
SR JS	6		2		8
S WGS	4	2			6
S WGSCN	14	1			15
S SLRD		2			2
EXPORT COACHES SHELLS					
BG COACHES SHELL TO SRI LANKA	51	49	19		119
SPECIAL COACHES SHELLS					
EMISSION TEST CAR		1			1
TOTAL	1557	1504	1602	1644	6307

Outturn of Coaches during 1957-58 to 1969-70														
COACH TYPE / YEAR	57-58	58-59	59-60	60-61	61-62	62-63	63-64	64-65	65-66	66-67	67-68	68-69	69-70	TOTAL
BROAD GAUGE : MOTOR COACHES														
AC EMU B							4		21	19	37	28	25	138
DC EMU B													2	2
WIDE BODIED TRAILERS														
AC EMU A & D						11	80	38	63	9	75	62	25	389
AC EMU C						10	79	49	40		23			201
DC EMU C													7	7
DC EMU D													7	7
AC COACHES														
WTAC										16	5	3		24
WFAC										4	1	2		7
WCBAC												2		2
WCDMAC										4	2			6
POWER CARS														
WLRM										8		3	1	12
CONVENTIONAL COACHES														
FIRST & SECOND CLASS													60	60
THIRD / SECOND CLASS	74	171	209	20	5				46	263			60	848
1st/2nd & THIRD CLASS											37			37
TLR / SLR			40	21	6		51							118
CNT/SCN3										4			38	42
TCW / SCW (2 TIER)				150						4	50			204
FIRST CLASS				3	229	180	3	2		20	62	67	44	610
FIRST & THIRD CLASS						171	18							189
THIRD CLASS											84		167	251
WTCN											62	202		264
SPECIAL COACHES														
CT								1	3					6
CK										4	2			6
CDN									13	7				20
RZ/RA											2			2
METRE GAUGE														
EMU MC									3	25	17			45
EMU OT									38					38
EMU DT									19					19
THIRD / SECOND / GS							109	357	101					567
FIRST, SECOND, & THIRD CLASS											10	34		44
TCN2 / SCN2								99	1					100
TCN2 / SCN3								1	49				30	80
FIRST / THIRD							1				22			23
FIRST & SECOND CLASS											49	40		89
THIRD CLASS												161		161
TLR												20	190	210
TCG											100			100
FIRST CLASS							6	97	119	36	51	9		318
FCL							1							1
SPECIAL COACHES : MG														
YRD								2				2	4	8
PLV									31	114				145
WC									5					5
CD											1			1
CL											8			8
AC MRA									2	2				4
EXPORT COACHES														
Total types of Builds	1	1	2	4	3	4	10	9	16	16	21	14	14	
TOTAL BG COACHES	74	171	249	194	240	372	235	110	190	362	442	369	444	3452
TOTAL MG COACHES				0	0	0	117	556	368	177	258	266	224	1966
GRAND TOTAL	74	171	249	194	240	372	352	666	558	539	700	635	668	5418
SUMMARY														
MOTOR COACHES	0	0	0	0	0	0	4	0	24	44	54	28	31	185
WIDE BODY TRAILERS	0	0	0	0	0	21	159	107	105	9	98	62	43	604
OTHER TRAILERS	0	0	0	0	0	0	0	0	37	0	0	0	0	37
AC COACHES	0	0	0	0	0	0	0	0	0	24	8	7	0	39
POWER CARS	0	0	0	0	0	0	0	0	0	8	0	3	1	12
CONV. COACHES	74	171	249	194	240	351	189	556	316	327	527	533	589	4316
SPECIAL COACHES	0	0	0	0	0	0	0	3	56	127	13	2	4	203
EXPORT														0
GRAND TOTAL :	74	171	249	194	240	372	352	666	558	539	700	635	668	5418

Outturn of Coaches during 1970-71 to 1979-80											
COACH TYPE / YEAR	70-71	71-72	72-73	73-74	74-75	75-76	76-77	77-78	78-79	79-80	TOTAL
BROAD GAUGE : MOTOR COACHES											
AC EMU B	24	14	19	9				22	31	23	142
DC EMU B	7	10	17	30	31	18	16				129
WIDE BOEIED TRAILERS											
DC EMU C	8	8	17	32	28	18	8				119
DC EMU D	6	6	17	31	31	19	5	22	10	30	177
AC EMU A & D	12	2						40	26	52	132
AC COACHES											
WTAC	6	1									7
WFAC	1	1		11	14					10	37
ACCW					10		5	24	25	39	103
FAC&F					1	5	1				7
WCBAC	1		1								2
WGFSCZAC							18	2			20
POWER CARS											
WLRRM	1	2		3		7					13
AC WLRRM						2					2
CONVENTIONAL COACHES											
THIRD CLASS	159	112	402	144		215	91				1123
TLR / SLR	20	56							50		126
FIRST CLASS	88	48	88	34		44	147	5			454
FIRST & SECOND CLASS								78			78
FIRST & THIRD CLASS	30	27		128	85						270
FCZ				10	26	1	1				38
SCW (TWO TIER)		24	21								45
TDC			19		73	86					178
SCN (THREE TIER)				311	199		57	247	316	370	1500
SCNLR									50		50
CB							15	32		10	57
SPECIAL COACHES											
DOUBLE DECKER							1	12		24	37
RZ/RA			1	1	3						5
MRA									5		5
MRD									1		1
MSA								4			4
MK/ML										2	2
METRE GAUGE :											
EMU OT					24			12			36
EMU DT					24			6			30
THIRD / SECOND / GS	89	186				93	105				473
SECOND&THIRD CLASS	67							110	185	76	438
FIRST & THIRD							88				88
FIRST CLASS		25	103					34			162
SCZLR								4			4
SCZ								8			8
SCZCH								2			2
TLR	112									26	138
CB								7			7
ML									3		3
YRD	4										4
EXPORT COACHES											
Total types of Builds	17	16	11	13	14	12	15	19	12	12	
TOTAL EXPORT	0	113	0	6	21	9	17	0	50	50	266
TOTAL BG COACHES	363	311	602	744	501	415	365	488	514	560	4863
TOTAL MG COACHES	272	211	103	0	48	93	193	183	188	102	1393
GRAND TOTAL	635	635	705	750	570	517	575	671	752	712	6522

Outturn of Coaches during 1980-81 to 1989-90											
COACH TYPE / YEAR ==>	80-81	81-82	82-83	83-84	84-85	85-86	86-87	87-88	88-89	89-90	TOTAL
BROAD GAUGE : MOTOR COACHES											
AC EMU B	30	33	33	18	6	10	20		33	40	213
DC EMU B					6	20	8	2	8		44
METRO BATTERY									3		3
METRO DMC		4	4	2	4	4		4			23
METRO NDMC		2	2	1	2	14		17			38
WIDE BODIED TRAILER COACHES											
AC EMU A & D	68	48	48						12	48	224
AC EMU C	31	24							2	58	115
DC EMU C						26		12	6		44
DC EMU D						26		12	6		44
OTHER TRAILER COACHES											
METRO TC		2	2	1	2	6		7			20
AC COACHES											
WTAC	20	7				6	3	3		23	62
WG FACCW										2	2
WFAC / WAC	7	5	20	19					2	4	57
ACCW	31	58	17	38	60	42	58				304
ACCW RM								12	54	25	91
SCZAC			25	3				12	10	1	51
WCBAC		1	7								8
WGFSCZAC										3	3
POWER CARS											
WLRRM	3										3
AC WLRRM	2		2					1	4		9
CONVENTIONAL COACHES											
FIRST CLASS										60	60
SECOND CLASS			242	515	607	565	538	262	245	84	3058
TDC / SDC		245	137		30						412
TCN / SCN	301	95	100	220	60	90	160	240	213	172	1651
SCNLR	32	19									51
WCB	19	14	13			2	8	30		30	116
SPECIAL COACHES											
DOUBLE DECKER					12	12					24
RA / RZ									12	26	38
METRE GAUGE											
AC EMU MC									6		6
EMU OT			22		12	7					41
ACCW		10						25	5	22	62
SCZAC										3	3
AC COMPOSITE								5	15		20
FIRST CLASS			4								4
THIRD CLASS		44									44
THIRD/SECOND								173	57	210	440
TCN	91	25	26					4	207	69	423
SCZ	7	12	27								46
SCZCH	1	4	2								7
SCZLR	2	3	1								6
FCZ	1	4									5
SCZR		3									3
TLR / SLR	74	36	26							45	181
CB			15								15
EXPORT COACHES											
Total types of Builds	17	24	22	9	12	14	4	18	19	20	
TOTAL EXPORT	0	32	0	0	24	0	57	4	0	0	117
TOTAL BG COACHES	544	557	652	817	789	823	795	614	610	576	6771
TOTAL MG COACHES	176	141	123	0	12	7	0	207	290	349	1305
GRAND TOTAL	720	730	775	817	825	830	852	825	900	925	8199
SUMMARY											
MOTOR COACHES	30	39	39	21	18	48	28	23	50	40	336
WIDE BODY TRAILERS	99	72	48	0	0	52	0	24	26	106	427
OTHER TRAILERS	0	2	24	1	14	13	0	7	0	0	61
AC COACHES	58	81	69	60	60	48	61	57	86	83	663
POWER CARS	3	0	2	0	0	0	0	1	4	0	12
CONV. COACHES	528	504	593	735	697	657	706	709	722	670	6521
SPECIAL COACHES	0	0	0	0	12	12	0	0	12	26	62
EXPORT	0	32	0	0	24	0	57	4	0	0	117
GRAND TOTAL :	720	730	775	817	825	830	852	825	900	925	8199

Outturn of Coaches during 1990-91 to 1999-2000											
COACH TYPE / YEAR ==	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-00	TOTAL
BROAD GAUGE : MOTOR COACHES											
AC EMU B		24	50	21	32	30	59	52	55	45	368
DC EMU B				30	16	33				4	83
DC EMU B (Disc Brake)				9							9
AC DC EMU B											0
METRO DMC	14										14
METRO NDMC	27	7									34
AC MEMU DMC				1	31	44	28	10	13	5	132
DMU / DPC OB				1	2	10	20	20	14	18	85
DMU / DPC US						1	2		6		9
DMU / DPC HHP										2	2
OHE CAR						4	3			12	19
DHTC								16			16
ARTV									5	5	10
ARMV DTC AC									5	5	10
WIDE BODIED TRAILERS											
AC EMU D	40	45	35	43		42	84	25	25	20	359
AC EMU C	32	45	40	43	53	69	50	87	85	60	564
DC EMU C				30	18	31				23	102
DC EMU D				30	18	31				4	83
DC EMU C (Disc Brake)				10							10
DC EMU D (Disc Brake)				10							10
AC DC EMU C											0
AC DC EMU D											0
OTHER TRAILERS											
METRO TRAILER	16										16
DMU/DTC OB / US				1		13	4	25	20	20	83
DMU/TC OB / US				4	16		44	25	20	22	131
AC MEMU TC					87	120	80	30	39		356
AC COACHES											
WCB AC			10	10	5			9		4	38
WGFZ AC											0
WGFACCW	10			16	16	30	14	16	20	17	139
SCZ AC VB		13	1								14
SCZ AC AB	32		32	13	17						94
WG SCZ AC RM									10	20	30
POW						21					21
RA AC	1						4				5
ACCW US	28	57	33	57	55	36	20				286
ACCW RM						5	20	34	70	50	179
WFAC	4		6					10		4	24
MIL ACCW							9				9
POWER CARS											
AC WLRRM	9		13	4	8	20	8	7	11	4	84
CONVENTIONAL COACHES											
SDC / GSCZ AB				35	52	85		133	107	45	457
SDC / GSCZ VB	80	100	153	158							491
Second Class / GS AB				20	257	157	318	225	291	299	1567
Second Class / GS VB		133	286	442							861
SCN / GSCN	17				62	67	169	200	221	308	1044
WCB AB				25	30	31	58	59	40	10	253
WCB VB	30	22		25							77
FIRST CLASS	170										170
SPECIAL COACHES											
RA / RZ	6						17				23
RDSO STAFF CAR			1								1
MK/ML			13								13
RDSO Fuel Test Car			1								1
METRE GAUGE											
AC EMU MC		15	4								19
POW		20									20
THIRD/SECOND	325	480	265								1070
TCN / SCN	162										162
SCZ / SDC	5	5									10
TLR / SLR	5	50	80								135
EXPORT COACHES											
Total types of Builds	21	14	17	21	19	21	20	19	19	24	
TOTAL EXPORT	0	0	0	0	5	10	0	27	0	0	42
TOTAL BG COACHES	516	446	674	1038	775	880	1011	983	1057	1006	8386
TOTAL MG COACHES	497	570	349	0	0	0	0	0	0	0	1416
GRAND TOTAL	1013	1016	1023	1038	780	890	1011	1010	1057	1006	9844

Outturn of Coaches during 2000-2001 to 2009-2010											
COACH TYPE / YEAR	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	TOTAL
BROAD GAUGE : MOTOR COACHES											
AC EMU B	18		2	12	27	33	45	30	9	14	190
AC EMU B (MMTS)			18	8							26
AC DC EMU B	3	5	10	21	19	14	12	32	156	151	423
KOL. METRO DMC											0
KOL. METRO NDMC MC											0
KOL. METRO NDMC INV											0
AC MEMU DMC	10		21								31
DMU / DPC OB	15										15
DEMU HHP	5	12	9	10	6	9	10	8	14	22	103
DEMU HHP J&K							5	1			6
DETC OB	4	8	7	14	5	8	4	16			66
DETC US	1		2								3
SPART DPC										2	2
ARTV	3										3
WIDE BODIED TRAILERS											
AC EMU D	10		2	12	20	17	38	9	4	10	122
AC EMU C	26		2	12	25	39	50	38	11	21	224
AC EMU A					12	10	18				40
AC EMU D (MMTS)			18	8							26
AC EMU C (MMTS)			18	8							26
KOL. METRO TC											0
DC EMU C	21										21
DC EMU D	21										21
DC EMU D HC	6										6
AC DC EMU C	3	48	1	16	4	20	4	32	156	148	432
AC DC EMU D	2	6	1	10	3	14	3	16	78	76	209
AC DC EMU D HC	1	12		6	2	8		18	78	74	197
OTHER TRAILERS											
DMU/DTC OB / US	12										12
DMU/TC OB / US	18										18
DMU/TC HHP	15	45	21	27	30	18	27	24	24	42	273
DMU/TC 1 HHP J&K							5				5
DMU/TC 2 HHP J&K							5				5
DMU DTC HHP J&K							5				5
SPART TC										1	1
ARMV DTC	3										3
AC MEMU TC	30		63								93
AC COACHES											
WCB AC	5	2									7
WG FACCW	15	15	12	15	33	18	15	20	10	25	178
SCZ AC			8		8		17	7	10	23	73
SCZ AC JS			20				5	6	2	10	43
WG SCZ AC RM	15	18		12		11					56
EOG SCZ AC GARIB RATH							20	32			52
ACCW RM	49	60	50	43	93	70	45	49	63	51	573
ACCW RM SS	1										1
ACCN											0
WFAC	3	2	8	10	12	7	2	35	12	10	101
EOG ACCW LHB									4	6	10
S WGACCW (Hybrid)											0
RA AC							1				1
POWER CARS											
AC WLRRM	5	3								6	14
CONVENTIONAL COACHES											
SDC / GSCZ	38	60	28	124	51	19	104	230	110	140	904
GSCZ JS			150				16	10	8	30	214
BG GS	332	300	170	269	217	300	251	470	348	292	2949
SCN / GSCN	300	419	170	323	366	414	312	66	129	180	2679
SR / SRD				10			81	58	47		196
S WGS (Hybrid)											0
S WGSCN (Hybrid)											0
S WGLRD (Hybrid)											0
SR JS			40				6		2	5	53
WCB	10	10	13	20	54	35	20	15	20	20	217
SLR / SLRD			59	80	130	91	75	26	37	33	531
RA						1					1
SPECIAL COACHES											
JET DEFLECTOR CRANE CAR						4				8	12
INTEGRATED COMMUNICATION CAR										7	7
MILITARY KITCHEN CAR						14					14
MIL/MOD. MIL. WARD CAR									5	3	8
DECCAN ODYSSEY			21								21
KSTDC							10	8			18
RTDC								22			22
IRCTC										23	23
SPURT CAR					2						2
EMISSION TEST CAR											0
EXPORT COACHES											
COACHES FOR ANGOLA						1	40	15			56
DEMU COACHES FOR SRI LANKA											0
Total Number of Builds	32	17	34	30	22	29	41	54	30	45	
GRAND TOTAL	1000	1025	944	1070	1119	1175	1251	1291	1337	1433	11645

Outturn of Coaches during 2010-11 to 2013-14

COACH TYPE / YEAR	2010-11	2011-12	2012-13	2013-14	TOTAL
BROAD GAUGE : MOTOR COACHES					
AC EMU B	30	120	100		250
AC EMU B MUTP				4	4
AC EMU B (MUTP-II)			4		4
AC EMU C MUTP				4	4
AC EMU D MUTP				2	2
AC EMU DHC MUTP				2	2
AC EMU B (MMTS)	12				12
AC DC EMU B	147	15			162
KOL. METRO DMC	4	12	10		26
KOL. METRO NDMC MC	4	12	10		26
KOL. METRO NDMC INV	4	12	10		26
DEMU DPC HHP	23	28	28		79
DEMU DPC HHP (J&K)		7	5		12
DEMU DPC HHP (HALDIA)			4		4
DEMU DPC 1600 HP			2		2
SPART DPC 1			5	11	16
SPART DPC 2			5	11	16
SPART TC				11	11
WIDE BODIED TRAILERS					
AC EMU A			14		14
AC EMU C	40	154	94		288
AC EMU D	20	86	52		158
AC EMU D HC			20		20
AC EMU C (MUTP-II)			4		4
AC EMU D (MUTP -II)			2		2
AC EMU D HC (MUTP-II)			2		2
AC EMU D (MMTS)	12				12
AC EMU C (MMTS)	12				12
KOL. METRO TC	4	12	10		26
AC DC EMU B MRVC				3	3
AC DC EMU C MRVC				3	3
AC DC EMU D MRVC				2	2
AC DC EMU D HC MRVC				1	1
AC DC EMU C	150	15			165
AC DC EMU D	78	10			88
AC DC EMU D HC	70	5			75
OTHER TRAILERS					
DEMU DPC HHP				20	20
DMU/TC HHP	70	83	60		213
DEMU HHP TC				72	72
DMU TC HHP J&K		23	13		36
DEMU HHP TC (HALDIA)				18	18
DMU TC HHP (HALDIA)			24		24
DMU TC 1600 HP			8		8
SPART TC			5		5
AC COACHES					
FACCW	20	21	25		66
SCZ AC	20	20	15		55
SCZ AC JS	5		5		5
ACCN	80	100	145		325
ACCN		10	35		45
FAC	10	8	12		30
LWACCW				10	10
LWSCZAC			14		14
LWFCZAC			3		3
LWSCN				15	15
SG FACCW				16	16
SG ACCW				122	122
SG ACCN				81	81
SG FAC				6	6
SG SCZAC				14	14
SG SCZAC JS				5	5
SG FACCW CBS				4	4
S WGACCW (HYBRID)		3	3		6
POWER CARS					
LWLRRM			3		3
CONVENTIONAL COACHES					
GSCZ	100	70	65		235
GSCZ JS	20				20
GS	265	343	514		1122
GSCN	128	180	135		443
SRD	12				12
SG GSCN				614	614
SG GSCZ				85	85
SG GS				304	304
SG SLR				140	140
SG CB				15	15
SR JS				2	2
SG GSCZ JS				25	25
S WGS (HYBRID)		6			6
S WGSCN (HYBRID)		15			15
S WGLRD (HYBRID)		2			2
SR JS	6				6
SG CB	20	15	15		50
SLRD	85	85	110		280
SPECIAL COACHES					
EMISSION TEST CAR		1			1
EXPORT COACHES					
DEMU COACHES FOR SRI LANKA	52	38	30		120
TOTAL NUMBER OF BUILDS	34	36	48		118
GRAND TOTAL	1503	1511	1620	1622	6256

