



Golden Peacock Award

# Integral Coach Factory

Chennai - 600 038

Ministry of Railways

सवारी डिब्बा कारखाना  
(भारतीय रेल की उत्पादन इकाई)



## वार्षिक रिपोर्ट Annual Report 2011-12





भारत सरकार/GOVERNMENT OF INDIA  
रेल मंत्रालय/Ministry of Railways  
सवारी डिब्बा कारखाना/Integral Coach Factory

महाप्रबंधक का कार्यालय/General Manager's Office  
चेन्नै/Chennai - 600 038.

अभय खन्ना  
महाप्रबंधक  
**ABHAY K.KHANNA**  
General Manager

सं.ए.डी./स्टेट/22  
No.A/D/Stat/22

दिनांक/Dated : 16.10.2012

सचिव/Secretary  
रेलवे बोर्ड/Railway Board  
नई दिल्ली/New Delhi - 110 001.



मैं 31 मार्च 2012 को समाप्त वित्तीय वर्ष की सवारी डिब्बा कारखाने की वार्षिक विवरणात्मक रपट इसके साथ भेज रहा हूँ।

I forward herewith the Annual Narrative Report of the Integral Coach Factory for the fiscal year ended on 31<sup>st</sup> March 2012.

अभय खन्ना  
**ABHAY K.KHANNA**  
महाप्रबंधक/ General Manager

## CONTENTS

<b>Chapter</b>	<b>Subject</b>	<b>Page</b>
I	General	1-14
II	Production	15-25
III	Production Planning & Control	26-28
IV	Quality System	29-34
V	Design & Development	35-42
VI	Export	43-46
VII	Projects	47-49
VIII	Stores	50-55
IX	Accounts & Finance	56-75
X	Electrical Production & Maintenance	76-84
XI	Civil Engineering	85-88
XII	Human Resource Development	89-100
XIII	Medical Department	101-102
XIV	Security Branch	103-105
XV	Right to Information Act	106

## ANNEXURES

<b>Sl.No</b>	<b>Subject</b>	<b>Page</b>
1.	Milestones & Achievements	107
2.	Organisation Chart	108
3.	Manufacture of Shells (Yearwise)	109-113
4.	Outturn of Coaches (Yearwise)	114-118
5.	Statement of Stores Transactions	119

**GENERAL****1.1 PRODUCTION**

2011-12 was a glorious year for ICF with achievements in many spheres of activity as ICF achieved the highest ever outturn of 1511 coaches as furnished hereunder:

Sl.No	Build	SHELLS		COACHES	
		Outturn	Total	Outturn	Total
	Motor Coaches				
1	AC DC EMU B	12	200	15	206
2	AC EMU B	120		120	
3	KOL METRO DMC	10		12	
4	KOL METRO NDMC MC	10		12	
5	KOL METRO NDMC INV	10		12	
6	DMU DPC HHP	28		28	
7	DMU DPC HHP (J&K)	8		7	
8	DMU DPC 1600 HP	2		0	
	Trailers				
9	AC/DC EMU C	3	378	15	388
10	AC/DC EMU D	10		10	
11	AC/DC EMU D HC	2		5	
12	AC EMU C	154		154	
13	AC EMU D	86		86	
14	KOL METRO TC	10		12	
15	DMU TC HHP GEN	53		53	
16	DMU TC HHP VEN	30		30	
17	DMU TC-III HHP (J&K)	16		16	
18	DMU TC-II HHP (J&K)	8		7	
19	DMU TC 1600 HP GEN	4		0	
20	DMU TC 1600 HP VEN	2		0	
	SS Hybrid Coaches				
21	S WGACCW	0	5	3	26
22	S WGS	2		6	
23	S WGSCN	1		15	
24	S SLRD	2		2	
	Air Conditioned Coaches				
25	SG FACCW	25	170	21	159
26	SG ACCW	105		100	
27	SG ACCN	0		10	
28	SG FAC	20		8	
29	SG SCZ AC	20		20	
	Conventional Coaches				
30	SG GSCN	172	701	180	693
31	SG GSCZ	90		70	
32	SG GS	339		343	
33	SG SLRD	85		85	
34	SG CB	15		15	
	Special Coaches				
35	Emission Test Car	1	1	1	1
	Export Coaches				
36	SRI LANKA DEMU DPC	8	49	6	38
37	SRI LANKA DEMU DTC	8		6	
38	SRI LANKA DEMU TC B	8		6	
39	SRI LANKA DEMU TC E	25		20	
	Grand Total	1504		1511	



## **1.2 GENERAL ADMINISTRATION - VISITS & EVENTS**

- ❖ Smt. Pompa Babbar, General Manager, ICF distributed sweets to all the Officers and Employees on 01.04.2011 for their contribution to achieve the highest ever production of 1503 coaches during the production year ended on 31.03.2011.
- ❖ The 56<sup>th</sup> Railway Week celebrations were held on 16.04.11. Shri. R.K. Upadhyay, GM/RWF, who was holding additional charge as GM/ICF, graced the occasion as Chief Guest and released the Awardees Booklet and presented the Shields/Trophies. He also distributed Railway Week awards to selected Officers and Employees for their meritorious service rendered during 2010-11.
- ❖ Shri. Sanjiv Handa, Member (Mechanical), Railway Board visited ICF on 06.05.11 and held discussions with HODs of ICF and also held discussions with high level officials of RITES & COFMOW, regarding expansion Project of ICF.



- ❖ Shri. Sanjiv Handa, Member (Mechanical), Railway Board visited ICF on 17-18 June, 2011 and held discussions with HODs of ICF.
- ❖ Shri. Arunendra Kumar, Additional Member (PU) and Shri. P.K.Sharma, Additional Member (Staff), along with other high officials from Railway Board visited ICF on 08.07.11 and held discussions with HODs and Staff Council Members of ICF.



- ❖ A training programme on New Pension Scheme (NPS) was conducted by officials from NSDL, Mumbai on 12.07.2011 for the staff of Personnel Branch and Accounts.
- ❖ High level Officials from RITES visited ICF on 06.08.11 and held discussions with HOD's. They also visited Shell and Furnishing Divisions of ICF.
- ❖ High level Officials from COFMOW visited ICF on 10.08.2011 and held discussions with HODs and later visited Shell and Furnishing Divisions of ICF.
- ❖ The 65<sup>th</sup> Independence Day Celebrations were held at Shell Administrative Building Lawns on 15.08.11. Sri Vijay P. Meshram, COS/ICF unfurled the national flag and accepted the guard of honour given by the RPF contingents.
- ❖ Shri R.N.Lal, Additional Member/Electrical, Rly. Board visited ICF on 30.08.11, and held discussion with HOD's of ICF. Later he also visited the Shell and Furnishing Divisions of ICF.

- ❖ Official Language Implementation Committee meeting was held on 21.09.11 and Members of OLIC and HODs of ICF participated in the meeting.



- ❖ Shri Pramod Uniyal, Additional Member (IT), Railway Board visited ICF on 28.09.11 and held discussions with HODs of ICF.



- ❖ The International Railway Equipment Exhibition, 2011 was held at Pragati Maidan, New Delhi from 28.09.11 to 30.09.11. ICF participated in this Prestigious Exhibition and Shri Vijay P. Meshram, COS/ICF inaugurated the ICF Pavilion in this Exhibition. Shri Dinesh Tirvedi, Hon'ble Minister of Railways and Shri Sanjeev Handa, Member (Mechanical), Railway Board and several VIPs visited the pavilion. Running model, Static models, photographs of various manufacturing activities of ICF and prestigious coaches manufactured at ICF were displayed.



- ❖ The Valedictory Function of Rajbhasha Utsav – 2011 was held at ICF on 30.09.11. COS/ICF was the Chief Guest and distributed the prizes to the Winners of various competitions organised by the Rajbhasha Vibhag of ICF.

- ❖ RPF Commemoration day was observed at NGO/MAS jointly with Southern Railway on 21.10.11 and tributes were paid to the martyrs who had laid their lives in the altar of duty.



- ❖ The Vigilance Awareness Week was observed in ICF from 31.10.11 to 05.11.2011. As part of the Vigilance Awareness Week a pledge was administered by CME/ICF to all the officers and staff on 31.10.11.



- ❖ The valedictory function of the Vigilance Awareness Week was held at ICF on 04.11.11. Shri. C.Elangovan, former Controller of Stores, Railways was the Chief Guest. He released the Vigilance Bulletin and the first copy was presented to Shri. Vijay P. Meshram, COS/ICF.



- ❖ Shri Abhay K. Khanna, assumed charge as General Manager, ICF on 11.11.2011.



- ❖ India International Trade Fair, 2011 was held at Pragati Maidan, New Delhi from 14.11.11 to 27.11.11. ICF participated in this prestigious Trade Fair and displayed the running model, static models and photographs depicting the manufacturing process and various products of ICF.



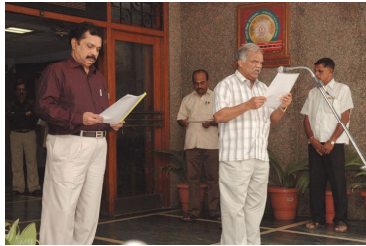
- ❖ Shri. Sanjiv Handa, Member Mechanical/Railway Board visited ICF On 14.11.2011 and inspected various coaches being manufactured at ICF.

- ❖ The 59<sup>th</sup> All India Railway Weightlifting Championship was conducted by ICF from 16.11.11 to 18.11.11. CME/ICF inaugurated the Championship on 16.11.11. Shri. Abhay K.Khanna, GM/ICF was the Chief Guest on the closing day celebrations and distributed the Trophy and Medals to the winners. ICF employees Shri. S.Mohanasundaram, secured 1<sup>st</sup> place, Shri. G. Suman secured 2<sup>nd</sup> place, Shri. D. Srinivasan secured 3<sup>rd</sup> place and Shri. Mohana Kumar secured 3<sup>rd</sup> place in the 56 Kg., 69 Kg., and 77 Kg. & 94 Kg. categories respectively. ICF team secured 3<sup>rd</sup> place for the overall championship.





- ❖ Quami Ekta Week (National Integration Week) was observed in ICF from 19.11.11 to 25.11.11. On this occasion a Pledge was administered by COS/ICF to all the Officers and Staff.



- ❖ A Safety Seminar on "Accident Prevention" was organized by ICF, in co-ordination with Chief Inspector of Factories, Govt. of Tamil Nadu, for Supervisors, Artisans and Contract Supervisors on 25.11.11.
- ❖ ICF Hospital Day celebrations were held on 29.11.11. On this occasion GM/ICF inaugurated the renovated lift facility for the patients in the ICF Hospital.



- ❖ Energy Conservation Week was observed in ICF from 14.12.2011 to 21.12.2011. To create awareness about the benefit of electrical energy conservation and energy saving among the employees, various seminars and lectures were organized by the Electrical Dept of ICF.



- ❖ Karuna, the School for "Special Children", celebrated its Annual Day on 20.12.2011. GM/ICF participated and distributed prizes to the special children of Karuna.
- ❖ The 15<sup>th</sup> Annual Day function of the St.John Ambulance Brigade was held at ICF on 21.12.2011. GM/ICF was the Chief Guest in the above function.
- ❖ The Official Language Implementation Committee meeting was held at ICF on 04.01.12. General Manager, PHODs/HODs and members of the OLIC participated in the meeting.



- ❖ Silver Jubilee Matriculation Higher Secondary School celebrated its Annual Day on 19.01.12. GM/ICF was the Chief Guest. He felicitated the meritorious students of the school on this occasion.



- ❖ The delegates from Japan International Co-operation Agency (JICA) visited ICF on 23.01.12 and held discussions with the General Manager and HODs of ICF.



- ❖ 63<sup>rd</sup> Republic Day celebrations were held at ICF on 26.01.12. GM/ICF unfurled the National Flag and accepted the guard of honour from the RPF contingents. He also inspected the colourful march past conducted by the RPF contingents, SJAB, TTC Apprentices and children of ICF schools.



- ❖ Sri Sanjiv Handa, Member (Mechanical), Railway Board inaugurated the Emission Test Car (ETC) on 06.02.2012 and also launched the Enterprise Resource Planning (ERP) Module in the presence of GM/ICF, Officers and employees.





- ❖ The Second Sub Committee of Parliamentary Committee on Official Language visited ICF on 13.02.2012 and held discussions with the General Manager and other officials. In this connection an exhibition was also organized.



- ❖ Pulse Polio Immunization Programme was organized at ICF Hospital on 19.02.2012 and 27.02.2012. On the occasion children were administered polio drops.



- ❖ The ICF Silver Jubilee Higher Secondary School celebrated its 47<sup>th</sup> Annual Day on 23.02.2012. General Manager /ICF was the Chief Guest on the occasion.



- ❖ Honorable Members of the Parliamentary Standing Committee on Railways headed by Sri T.R.Baalu, M.P., visited ICF on 25.02.2012. On the occasion a meeting was held and the Committee later visited both Shell and Furnishing divisions of the Factory and also the Regional Rail Museum.



- ❖ Officials from the National Defence College visited ICF on 15.03.2012 and held discussions with the General Manager and HOD's. They also visited the Shell and Furnishing divisions of the factory.



- ❖ Shri Deepak Krishan, General Manager/S. Rly. visited ICF on 22.03.2012 and held discussion with General Manager/ICF. Later he visited the Shell and Furnishing divisions of the factory.



- ❖ The Law Branch organized a Lecture on "Labour Laws" at the D&D auditorium on 24.03.2012. General Manager, PHODs and other officials participated in the Lecture.



The Official Language Implementation Committee meeting was held at ICF on 30.03.12. General Manager, PHODs/HODs and members of the OLIC participated in the meeting.



### **1.3 Functions of Law Branch**

The Law Branch in ICF is functioning under the direct control of G.M. The Cadre Controlling Authority of the Law Branch is G.M/ICF and the Administrative control rests with C.P.O.

The function of the Law Branch is to conduct regular litigation work on behalf of the Administration in addition to tendering legal opinion in all matters pertaining to various Branches of the Administration involving principles of law. The court cases handled by Law Branch pertain to Service Matters, Suits filed by or against the Administration in respect of various contracts of Stores Department, Engineering Works Contracts, Electrical Department cases, Risk Purchase cases of Stores Department and Accounts department cases before various courts.

The Law Branch tenders legal advice in respect of Establishment, Contracts, Tenders and Stores matters and also vetting of Guarantee Bonds, Indemnity Bonds, Power of Attorney, Partnership Deeds, Memorandum & Articles of Association, Title Deeds in respect of House Building Advances of staff etc.. Besides, we contest cases filed before various Courts/Legal Forums such as Central Administrative Tribunals, High Courts, Labour Cases before Industrial Tribunals, Labour Courts, WCA cases, Family Courts and SLP before Supreme Court.

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

During the period from April 2011 to March 2012, this Branch dealt with 1019 opinions, which includes vetting of Guarantee Bonds, Indemnity Bonds, Power of Attorneys, Agreements, Tender Schedules etc. Besides, the Law Branch handled a total number of 234 cases in various forums viz. Tribunals to Supreme Court.

During the financial year, Law Branch has taken innovative steps to computerize the day-to-day working of the section to go apace with the electronic era.

The following work has now come into the fold –

- (1) Maintenance of Law Website for monitoring court cases.
- (2) Data input system of cases.
- (3) Tapal movement.
- (4) Registering and Disposal of cases.

### **I - CASES PERTAINING TO PERSONNEL BRANCH**

<b>Name of the Court</b>	<b>Opening Balance</b>	<b>Registration</b>	<b>Disposal</b>	<b>Closing Balance</b>
Supreme Court	4	-	1	3
High Court	25	10	8	27
CAT	13	33	13	33
C.C.C.	28	7	2	33
Labour Court	1	1	1	1
Family Court	12	4	4	12
Other Courts	2	1	2	1
Garnishee Cases	116	4	8	112
<b>Total</b>	<b>201</b>	<b>60</b>	<b>39</b>	<b>222</b>

### **II - CASES PERTAINING TO OTHER DEPARTMENTS**

<b>Name of the Court</b>	<b>Opening Balance</b>	<b>Registration</b>	<b>Disposal</b>	<b>Closing Balance</b>
Supreme Court	1	-	-	1
High Court	27	3	4	26
CAT	-	1	-	1
C.C.C.	3	2	1	4
Other Courts	5	-	1	4
<b>Total</b>	<b>36</b>	<b>6</b>	<b>6</b>	<b>36</b>

### **III - OPINION & VETTING OF ALL DEPARTMENTS**

	<b>Opinion</b>	<b>Vetting</b>	<b>Total</b>
Registration	143	876	1019
Disposal	143	876	1019

Our success rate during the year is about 76% since 22 cases of High Court, CAT and City Civil Court have been decided in favour of the Railway Administration out of 29 cases totally disposed off.

## **1.4 VIGILANCE ORGANIZATION**

The Vigilance Organization is under the control of Chief Vigilance Officer. 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 2011-2012, 85 preventive / surprise checks were conducted with a view to highlighting the irregularities and to setting right the lacunae in the existing system / procedure and system improvements were advocated wherever needed.

- During 2011-2012, 44 complaints were received and 24 complaints were investigated.
- As a result of preventive checks and investigation of complaints, 01 Major penalty proceedings and 05 Minor penalty proceedings were initiated.
- During this year, 04 preventive checks have resulted in administrative action.
- Generally, verification of complaints and preventive checks in sensitive areas are being continued.
- Employees with doubtful integrity are kept under surveillance.

### **EARNINGS**

Due to vigilance activities, earnings to the tune of Rs. 0.28 lakhs were achieved.

### **VIGILANCE AWARENESS WEEK**

Vigilance Awareness Week, 2011 was observed as directed by Central Vigilance Commission & Railway Board. Shri C. Elangovan, Retired Controller of Stores/ICF was the Chief Guest. Quiz, slogan and essay competitions were held.

## **1.5 DATA CENTRE**

### **Implementation of Enterprise Resource Planning (ERP) at ICF**

ICF has implemented Enterprise Resource Planning (ERP) covering Production Planning (PP), Materials management (MM), Quality Management (QM), Plant Maintenance (PM), Product Cost Controlling (CO), Payroll & Incentive (HR) modules of SAP ERP. The inauguration was done by Member (Mechanical), Railway Board on 6th February 2012. The project included installation of hardware such as PCs, thin clients, touch screen kiosks, hand-held devices in various locations on shop-floor and offices. The ICF campus, including shop-floor locations, has now been brought under a single network.



Implementing ERP in any organization is a mammoth task, especially in an enormous organization like the ICF. The work involved a dedicated team of persons that included officers and staff from IT Centre and the various departments in ICF, personnel from M/s L & T Infotech Ltd and CRIS., New Delhi.

The team embarked upon the following activities over a period of nearly two years:

1. Study of the existing business processes – As-is study
2. Mapping of the above processes to those in SAP and determining the functional gaps through workshops – Business Blueprint document.
3. Installation of new hardware at the IT Centre, offices and various shop-floor locations.
4. Establish a campus-wide network – covering various offices and shop-floor locations.
5. As part of the realization phase:-
  - a. Configure the ERP system, develop the reports, interfaces, conversions and enhancements,
  - b. Conduct unit, integration and user acceptance testing
6. Complete system testing, end-user training and devolve a cut-over plan, as part of the final preparation to Go-live.
7. Migrate the master data from the legacy system to the new system.
8. Cut-over of the transactional data on the eve of Go-Live
9. Lab load testing – to determine the suitability of the hardware and software in carrying out the transactions
10. Go-live with new system, without actually having closed the factory operations even for a single session.

The project has been launched successfully and emergent implementation issues are being addressed from time to time. The project is currently in its support phase. ERP implementation is the first of its kind in a Production Unit on IR.



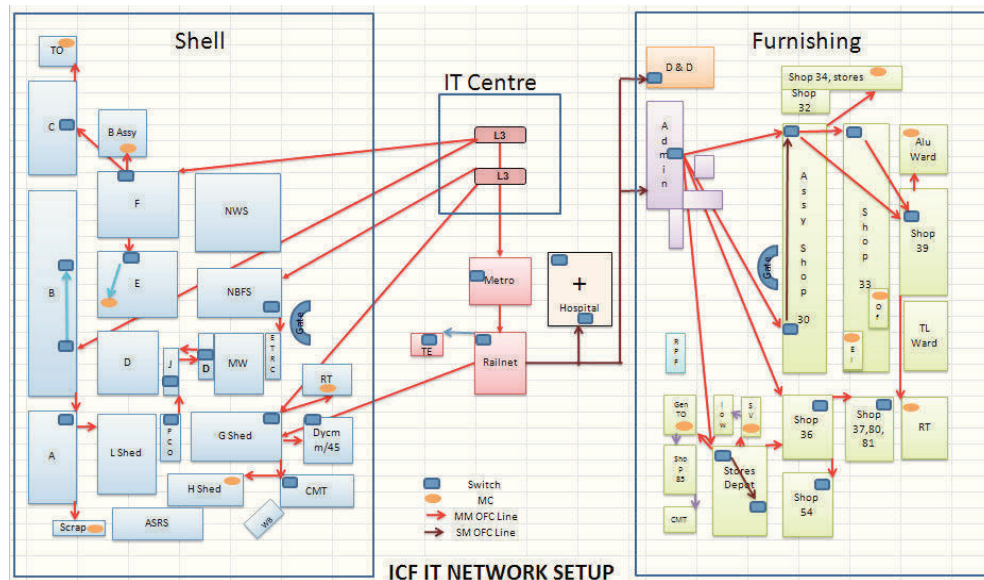
### 1.5.1 Server Virtualization

IT Centre has embarked upon Server virtualization – consolidation of multiple independent servers into one physical server (host), using virtual partitions, each of which would be running a separate operating system. In this context, departmental servers from the Stores and Medical departments have been taken over and are running as virtualized servers at IT Centre. It is proposed to extend this arrangement to the other ageing servers in the various departments, so as to provide a controlled environment and proper upkeep of server hardware.



### 1.5.2 Networking - Campus wide networking & Network re- organization

A Campus wide network covering production shops in Shell and Furnishing, the Stores Depots and Administrative Office Buildings has been completed as part of the ICF ERP Project. The existing network has been integrated with the ERP LAN. During this exercise, several unmanageable switches have been replaced with manageable switches so as to bring all the nodes into the Network Management System (NMS), for easy monitoring and trouble shooting of nodes in the integrated network. Virtual LANs (VLAN) were created within the LAN to provide better security, performance and maintenance.



### 1.5.3 IT Centre – a wireless zone

The entire Information Technology Centre building has been made a wireless hotspot with the introduction of two wireless access points. With this it is now possible to access the Intranet / Internet using any wireless enabled device.

#### 1.5.4 Wireless connectivity between Shell and Furnishing Divisions

In order to have a backup for the OFC link between Shell & Furnishing, IT Centre has completed the installation of a wireless-link. This would help in eliminating down-time in case of an OFC failure and ensure continuous availability of Network to the users.

## Information Security

### 1.5.5 Unified Threat management device

A Unified Threat Management (UTM) device that includes a Firewall besides other features such as anti-spam, intrusion detection / intrusion protection etc has been installed at the IT Centre and different zones were created to improve the security of the Servers and the internal LAN, from the outside world.

### 1.5.6 Access control to Server Room

Server room access is to be curtailed from the point of data security and unauthorized access. In this direction, a biometric access control system has been installed at the IT Centre Server Room.

### **1.5.7 Patch Management**

Patch management software has been procured and installed on one of the servers in IT Centre. With this software, it is now possible to test and push Operating system patches and Application software patches remotely from the server to any of the client PCs in the network. This is to ensure exploitation of any vulnerability at the operating system level or at application level by any outsider.

### **1.5.8 Anti-virus Software**

During the year, 900 anti-virus software licenses were procured and installed on client machines in the various departments. The antivirus software signature update as well as patch application happens from the Central Server to ensure all vulnerabilities are addressed.

### **1.5.9 Electronics Pay slips**

As part of ICF's green initiatives, it is proposed to distribute pay-slips to employees electronically over mail. As a first step in this direction, pay-slips for March 2012, pertaining to officers, were distributed electronically, thereby doing away with paper-based printing of such pay-slips.

## **1.6 PROGRESS OF HINDI**

### **1.6.1 ORGANISATION**

Rajbhasha Vibhag of ICF 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 related activities like Translation, Training of staff in Hindi and Implementation of Annual Programme. It is functioning under the administrative control of Mukhya Rajbhasha Adhikari. Mukhya Rajbhasha Adhikari is assisted by Senior Rajbhasha Adhikari along with two Rajbhasha Supdts., three Rajbhasha Asst.Gr.I, three Rajbhasha Asst. Gr.II, and a Junior Stenographer.

### **1.6.2 TRANSLATION**

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

There are 229 forms in ICF and all these forms are 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 Hindi and English.

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

### **1.6.3 TRAINING**

During the year 2011-12, two sessions of Hindi classes i.e. total **6** classes i.e **3** each in Shell & Furnishing Division were conducted by Ministry of Home Affairs for employees in both Shell and Furnishing Divisions. Employees were suitably rewarded on securing creditable marks in the Hindi Prabodh, Praveen and Pragya examination.

### **1.6.4 INCENTIVE SCHEME**

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

### **1.6.5 AWARDS, PRIZES Etc.**

Rail Mantri Rajbhasha Padak was awarded to Shri Hemant Kumar, CME in appreciation of his contribution in the areas of implementation of Official Language Hindi on 09/11/2011 during a ceremony held at Railway Board, New Delhi.

Two employees of this administration participated in 45th All India Hindi Typing competitions conducted by Kendriya Sachivalaya Hindi Parishad at All India Railway level and have secured noteworthy positions. Shri M. Subramani, Steno to Dy. CEE/Con. of Electrical Department secured first prize in Hindi Typewriting competition held for all Central government offices under Hindi and Non- Hindi speaking category and Smt. Rajashree Anandan, CA to Dy. CME/Plt of Mechanical Department had secured first prize in Non-Hindi speaking category.

Shri Subramani, CS&WI/Computer of Personnel Department secured Consolation prize in All India Railway Elocution competition held at Udaipur on 06.09.2011.

### **1.6.6 NOTING AND DRAFTING IN HINDI**

The employees trained in Hindi language and Hindi Workshop are encouraged to write noting and drafting in Hindi.

### **1.6.7 OFFICIAL LANGUAGE IMPLEMENTATION COMMITTEE**

The Official Language Implementation Committee (OLIC) is functioning at ICF under the Chairmanship of General Manager. The committee reviews 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.

### **1.6.8 HINDI FORTNIGHT CELEBRATIONS**

In accordance with the directions issued by Rajbhasha Vibhag/Ministry of Home Affairs and Railway Board, Hindi Fortnight celebrations were organised. The celebration was started with Rajbhasha Pradarshini on 14.09.2011 which was inaugurated by FA&CAO/ICF by lighting the 'Kuttuvilakku'. 17 offices of ICF participated in this exhibition. Cash Prizes were given to the best-exhibited office during the valedictory function. During this fortnight, different Hindi competitions like Elocution, Essay writing, Noting & Drafting in Hindi etc., were organized for both Officers and Employees and the winners were suitably awarded. The fortnight celebrations ended with colourful cultural programme and Poet symposium on 30.09.2011.

### **1.6.9 HINDI LIBRARY**

Three Hindi libraries are functioning at ICF – Shell division, Furnishing division and at ICF Railway Hospital. Library functioning at Shell division named as **"Thiruvalluvar"** Library has **5501** books, Furnishing division library named as **"Premchand"** Library has **4097** books and ICF Hospital library named as **"Tulasidas"** Library has **2895** books. All the three libraries are attached with reading room. Daily newspaper, 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.

Official Language Policy has been added as one of the subjects in the Supervisor Module Programme being organized by TTC/ICF. This helps the staff to answer the questions on OL Policy in the departmental examinations.

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

Employees' pay slips were printed in Bilingual form.

ICF brings out a quarterly House magazine "RAIL RANJANI" to encourage our staff to keep up their knowledge of Hindi.

## PRODUCTION

### 2.0.1 Production Highlights

2011-12 was a glorious year for ICF with achievements in many spheres of activity. During the year 2011-12, ICF achieved the highest ever outturn of 1511 coaches.

The special builds manufactured in 2011-12 include Kolkata Metro rakes, AC EMU rakes including those for Central Railway, AC/DC EMU rakes, LHB hybrid coaches, J&K DEMU rakes, DEMU rakes for Sri Lanka and Emission Test Car.

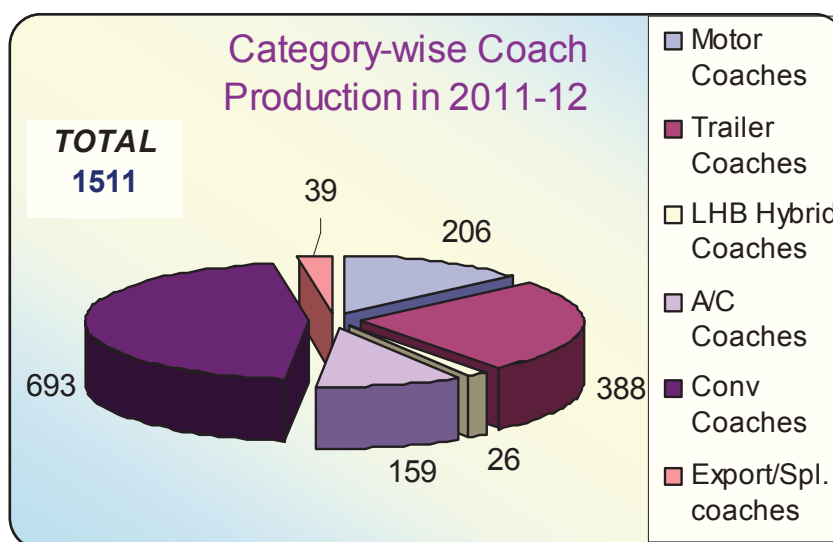
### 2.0.2 Production of Shells

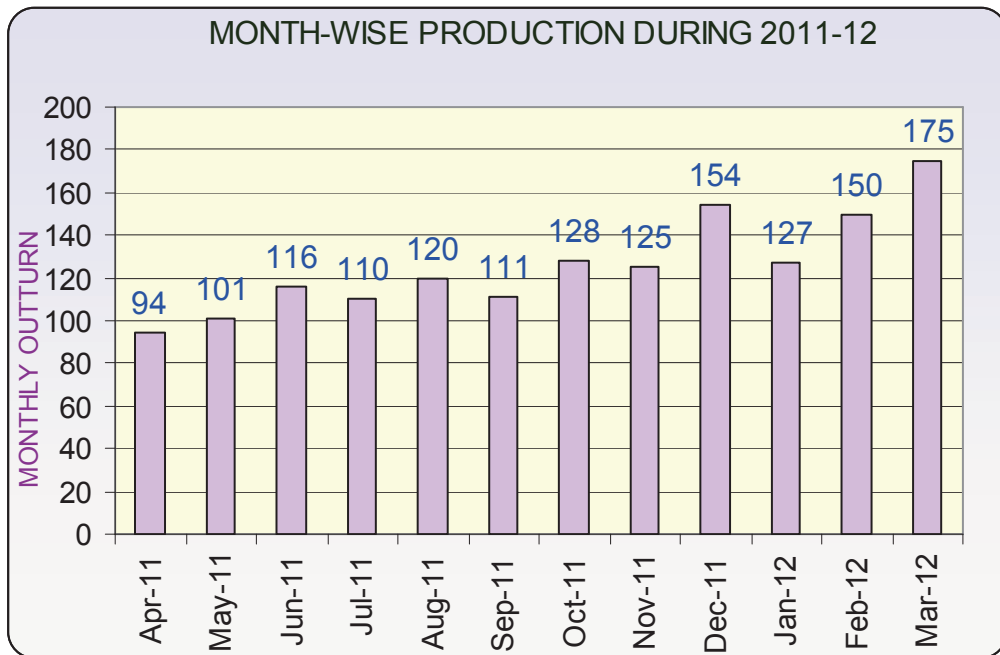
A total of 1504 shells (1701.83 Equated Shell Units) consisting of 37 types were manufactured in the year 2011-12. These include 200 motor coach shells, 378 trailer coach shells, 5 stainless steel hybrid coach shells, 170 AC coach shells, 701 conventional coach shells, 49 DEMU shells for Sri Lanka and an Emission Test Car shell.

### 2.0.3 Production of Coaches

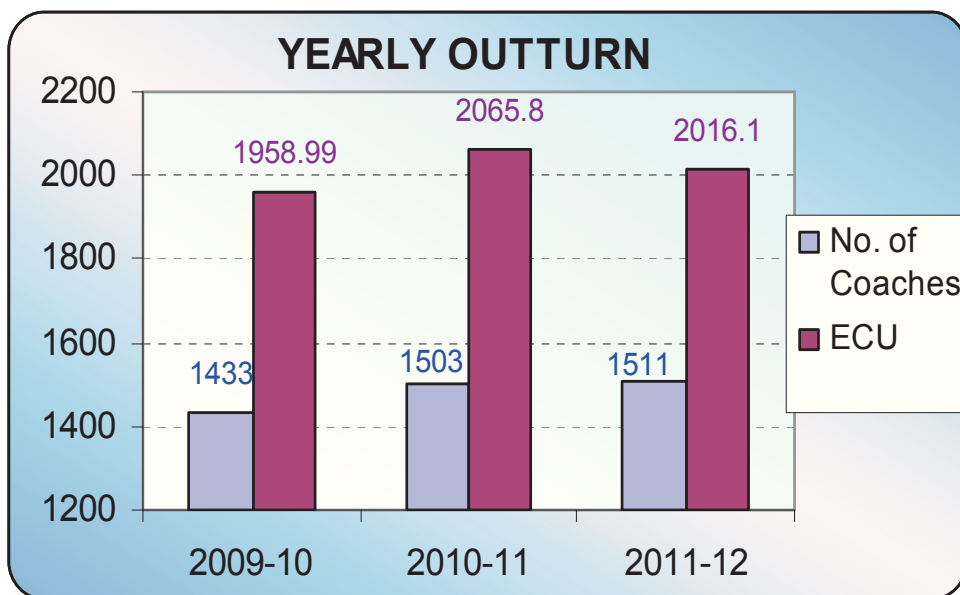
During the year, a record outturn of 1511 coaches (2016.07 Equated GS Units) consisting of 36 types was achieved, surpassing the previous best outturn of 1503 coaches achieved in 2010-11. These include 206 motor coaches, 388 trailer coaches, 26 LHB hybrid coaches (both Air Conditioned and non-Air Conditioned), 159 AC coaches, 693 conventional coaches, 38 export coaches and an Emission Test Car.

Category-wise production of coaches and month-wise outturn during 2011-12 is indicated below:





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





## 2.1 Innovations – Production of New Builds

### 2.1.1 Emission Test Car

ICF has manufactured an Emission Test Car for RDSO for testing pollution level of exhaust gases emitted from diesel locos. The coach can be put in to service in Diesel sheds or can be attached to a running formation with Diesel Loco. This coach is equipped with mini pantry and well-furnished crew rooms similar to a saloon car.

The Emission Test Car was flagged off by Member (Mechanical) on 06-02-2012.



## 2.2 First Stainless Steel Kolkata Metro Shell for the 6th Rake

First stainless steel shell for the 6<sup>th</sup> rake of Kolkata Metro was manufactured. Sub-assemblies such as Sidewall, Roof and all other sub-assemblies were made on war footing without compromising on the stringent quality requirement of Kolkata Metro shells within a short period of 6 days and shell lifting was done in a record time. Member Mechanical during his visit to ICF on 18.06.2011 appreciated the work done on the shell.



### 2.3 Shells for 1600 HP Stainless Steel AC-AC 1600 HP DEMU Coach



Exterior View TC- Vendor



Interior View TC- Vendor

Stainless steel shells of 1600 HP DEMU rake were manufactured in 2011-12. The first shell for 1600 HP AC/AC DEMU DPC was turned out in January 2012. Nose cone made from stainless steel has been provided in this shell for the first time. The rake consists of 10 coaches and the design of shell is based on LHB technology. Under frame assembly was fabricated in-house. Stainless steel sidewall, end wall and roof assembly were obtained from trade. LHB type body assembly fixture was modified to suit dimensions of this new design coach. All exterior welding has been done by TIG welding for the first time by ICF employees.



(DEMU DPC Shell)



(NOSE CONE)

### 2.4 Introduction of Bio-Toilet System in Conventional Coaches

As per Railway Board's directions, ICF fitted Bio-Toilet System in one rake consisting of 2 ACCW, 15 GSCN, 4 GS, 2 WCB and 3 SLRD coaches during 2011-12. Bio Toilet System is a modified form of Controlled Discharge Toilet System (CDTS) in which the fecal matter is biologically disintegrated and innocuous discharge is let out.





## 2.5 Other Achievements

### 2.5.1 Dispatch of Coaches in the form of Rakes

565 Coaches were dispatched in the form of rakes out of the total production of 1511 coaches during the year 2011-12.

S.No	Coach Type	No. of Rakes
1	AC DC EMU	05
2	AC EMU	36
3	KOLKATA METRO	05
4	DEMU	12
5	DEMU J&K	03
6	DEMU SRILANKA	06

### 2.5.2 LHB Stainless Steel Door Fitment in Conventional Coaches

Conventional SCN coach door frame has been modified for fitment of LHB doors in SCN coach on trial basis to increase life of doors. 19 shells were turned out with this door in 2011-12.

The modification has the following advantages:

- The door does not have the problem of bottom pivot breakage which would lead to sick marking of coaches.
- The door is not prone to corrosion and thus needs less maintenance at POH workshops.
- More aesthetic with glass windows.
- Increased doorway width of 825mm when compared to 782mm of conventional doorway.
- Bottom footstep, top footstep and step sheet dimensions are increased for better passenger safety.
- Elimination of many detail items for door assembly such as MS & aluminum back pieces for door sealing, various shim back pieces for door lock and moulding angles.



### 2.5.3 Introduction of Bug- O Make Auto CO<sub>2</sub> Welding in Head Stock

A machine for automatic CO<sub>2</sub> welding make-Bug-O systems, USA, has been introduced to weld inner head stock beam of under frame head stock at Shop 18. The said machine consists of a rail system and an electrically operated trolley system for carrying out automatic CO<sub>2</sub> welding in straight line. This system gives good quality weld and it can be operated by semi-skilled operator.



**Bug-O in operation**



**Torch holding head on rail**

#### **2.5.4 Universal Dummy Bogie**

20 LHB shells were brought from RCF/Kapurthala to develop in-house expertise in interior furnishing. These shells were brought through road and the corresponding FIAT bogies not expected immediately from RCF. To undertake the furnishing work, these shells are required to be necessarily lowered on a bogie. ICF does not have FIAT bogies and LHB shell cannot be lowered on conventional dummy bogies.



Universal dummy bogie has been improvised duly converting conventional dummy bogie with suitable modification on bogie bolster as per drawing. No. ICF/J&T/Misc -2350. These bogies shall be suitable for following types of shells.

1. Conventional
2. EMU
3. LHB EOG

#### **2.5.5 Introducing Vinyl Wrapping pasting System in Duronto Coaches**

Multi-colour vinyl wrappers were pasted throughout the exterior of Duronto Coaches (04 FAC & 02 ACCW). Numbers and marking on the exterior wall were also done with Stickers.





### 2.5.6 Manufacture of Jig & Fixture for Manufacturing DEMU DPC Modular Frame Assemblies:



Fuel Tank Mounting Bracket Modular Frame Fixture



Locating Fixture For Fuel Tank



### 2.5.7 Modified DMU/DPC End Part Fixture for 7m Modular Frame

Railway Board has asked ICF to manufacture more DEMU coaches to cater to the needs of passenger service. DEMU coaches are heavy builds and ICF is finding it difficult to meet the demand. On analyzing the DEMU shell manufacturing cycle, under-frame manufacturing is found to be the production bottle neck.

Initially complete under-frame fabrication was being carried out at under-frame stage. In order to reduce the cycle time, modular concept has been introduced. In this concept under-frame was assembled with two end parts and one middle part of 11.5m, consisting of two modules of 4.5m and 7m respectively were made.

The first modular frame of 4.5m length assembled with fuel tank brackets, battery box mounting brackets with all the heavy cross members was made. To manufacture this module a suitable assembly fixture was made. Another module of about 7.0 meters was also manufactured by modifying the existing DMU/DPC end part assembly fixture in Shop-18.

### 2.5.8 Flexi-Body Jig Compatible with both LHB Coaches and 1600 HP DEMU



Bolted Design Camber Locking



Quick Changing Side Wall Clamping





Width Stopper Arrangement



Full View of Flexi Body Jig

Railway Board asked ICF to manufacture IGBT 1600 HP DEMU coaches on priority. ICF is already manufacturing special builds like IR DEMU and Sri Lanka DEMU coaches. The number of available body jigs for special builds at 'B' Shed is inadequate to cater to the need.

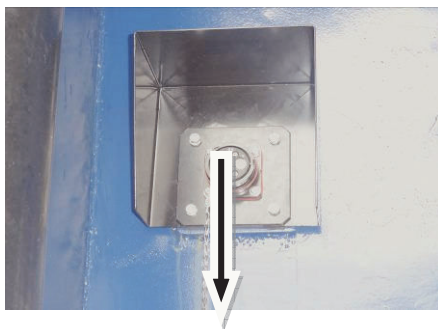
The feasibility of converting 6B body assembly jig, which is meant exclusively for LHB coaches and cannot be used for any other build, was studied and a new flexi concept for LHB cum 1600 HP DEMU coaches was developed in coordination with Jig&Tool.

Manufacture of detail items and conversion of fixture for assembly 1600 HP DEMU shells were completed within a record time of one month, with the following special features:-

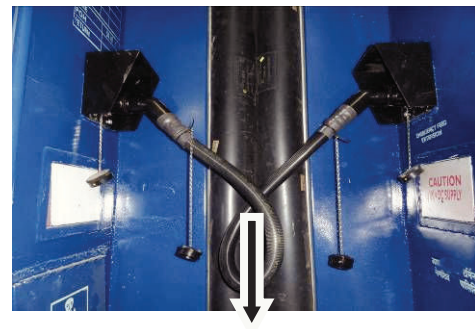
- LHB fixture does not have provision for camber setting. Structural changes were made to introduce camber setting for IGBT DEMU coach.
- All the structures are of bolted design to enable quick conversion from LHB to DEMU design and vice versa.
- A quick changing flexi type sidewall clamping arrangement has been provided which is suitable for LHB and DEMU coaches.
- Width stoppers have been provided to maintain width of shells.
- Removable Endwall tightening clamps and end platforms are provided at both ends.

### 2.5.9 Provision of Emergency Feed Supply Terminals

Eight ACCW coaches provided with Emergency feed supply (EFS) terminals were tested and dispatched. So far 36 coaches were provided with EFS terminals.



EFS SOCKET



EFS COUPLING

### 2.5.10 Decongestion of Under Frame Cable Layout in Kolkata Metro Coaches

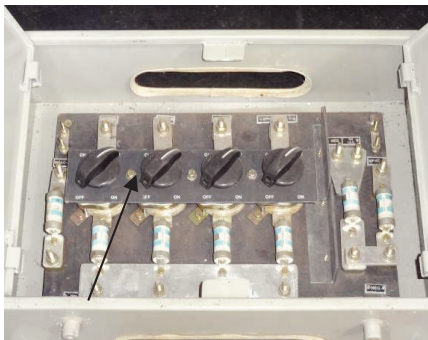


( Additional cable tray )

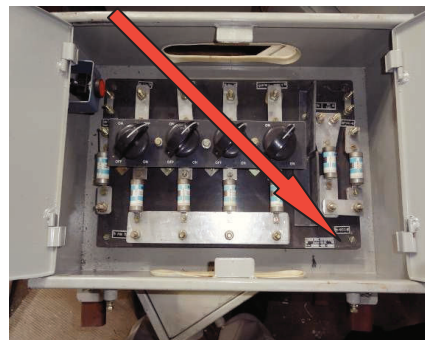
Based on feedback received while commissioning of Kolkata Metro rakes at Metro Railway, the under frame cable layout has been decongested by duly providing additional tray arrangement. This would also help free ventilation in under frame area for the equipments as well as cables. This arrangement has been implemented in the 7<sup>th</sup> rake of Metro coaches.

### 2.5.11 Provision of Emergency Light Testing Push Button

Five conventional coaches were provided with emergency light testing push button, Tested and dispatched.



Rotary switch panel without Push button



Rotary switch panel with Push button

## 2.6 Housekeeping & Decongestion

### a) Stacking of Head Stocks at J-Shed - Shell Division

Initiative has been taken to stack the head stocks uniformly with proper barricades around them. Now this area looks better due to orderly stacking.



Right side east entrance of J - Shed



Left side east entrance of J – Shed



## b) Upkeep of Shop 30 South side and East end - Furnishing Division

Cleaning of Shop 30 south side was taken up where heaps of scrap and material were in a mixed condition. It was very tough to pick material from the heap of scrap. We have taken out all the items with scrap and cleaned it as a one-time-measure. After cleaning, the area has been divided with partition frame with pillar number. All the items were kept in concerned stage and handed over to concerned SSE for further maintenance.

The following are the photographs of newly maintained south side.



## 2.7 Infrastructure Improvement

Coaches like Kolkata Metro, LHB, J&K DEMU TC had to be brought to 10<sup>th</sup> stage pit of shop 30 for removal of cover for CP pin and cotter & split pin to facilitate placement of coaches on high dip-lorries. With the provision of pit at intake stage these coaches can be directly taken in, which reduces unnecessary movement of coaches and saves time.



In Shop 39 one aluminium pipe cutting machine was procured and erected successfully and the machine is working satisfactorily.

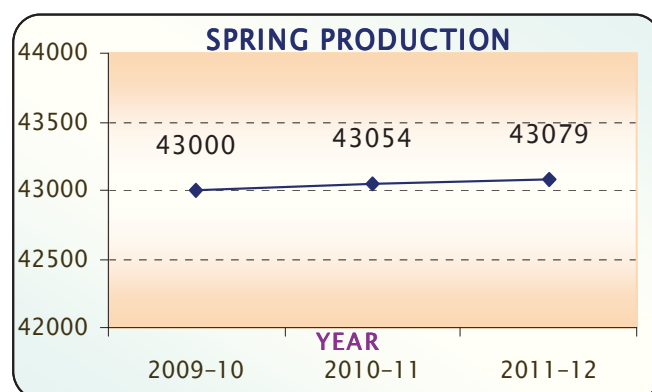


Additional 34 nos. of pneumatic points were provided in shop-30 dispatch shed near first line. These pneumatic points are used to complete the balance finishing work during dispatch.



## 2.8 Production of Helical Springs

During the year 2011-12, the spring shop achieved a record production of 43,079 springs, compared to 43,054 springs during 2010-11. Out of the total production during 2011-12, 32,546 springs were for in-house consumption and 10,533 were supplied as spares to Zonal Railways and RCF.



## 2.9 Assistance Rendered to Zonal Railways

Spares involving 1,55,662 man-hours at a value of Rs.14,35,18,748/- were supplied to Zonal railways during 2011-12.

## **PRODUCTION PLANNING AND CONTROL**

### **3.1 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.

### **3.2 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 2011-12 are tabulated below:

	Shell Division	Furnishing Division
No. of Procurement Memos issued	1071	3270
No. of Reviews sent to Stores	4020	7765
Technical scrutiny of Tender Files	742	3280
No. of S-1302 Indents issued	122	750

### **3.3 Measures to Improve Productivity/Reliability**

**Inv.No.1391-Godrej Press Brake (400 Ton)** is an important machine and has been utilised for more than 11 years. This machine was under breakdown in the month of November 2011 due to damage of Pitman screw rod which is massive with diameter 180mm & length 810 mm. The machine had to be restored to production at the earliest due to its critical requirement.

This massive screw rod was manufactured by utilizing in-house expertise and rejected axle material to IRS-R-16/95 as raw material, and the damaged screw was replaced. The machine was restored to production on 17.01.2012. This has resulted in a saving of nearly Rs.4 lakhs on spares cost.

**Inv.No.9070 & 9071 – Ingersoll Rand 1000 CFM Air Compressors:** Two numbers of Ingersoll Rand 1000 CFM Air compressors were commissioned in the year 2008. OEM has specified a particular oil to be used as cooling oil in the compressor. This oil is very expensive and costs more than Rs.1500/- per litre. The machine has got 20 liters capacity.

Alternative oil has been identified and adopted which costs less than Rs.100/- per litre. The combination of HLP-68 oil with an additive oil of Omega 904 has been giving successful results with equivalent performance and the same is being used in the subject compressors at present. This oil is much cheaper when compared to the oil specified by the OEM and has resulted in huge savings. Beside, we need not depend on supply from OEM. Equivalent performance at reduced cost is achieved.



**Inv. No. CR 18; EOT Crane:** The long travel wheel of this crane is of bush type. In order to improve the reliability and to overcome the age related end carriage geometrical misalignment, the crane is provided with bearing mounted wheel. This resulted in reliability of the crane with minimized long travel failure on mechanical account.

**Chain Sling Management:** In "J" shed and part of "NBF" shed, the chain sling with single master link in crane hook with user friendly and safe handling methods introduced and performing successfully. This will reduce the number of chain type requirement.

As part of ergonomics and positive handling Gr.100 chain with self-locking hook chain sling and four leg Gr.100 chain sling introduced and in use.

The details required for roll out body assembly fixture to be erected in IV- bay were manufactured in a record time. The complicated items different from other existing body assembly fixture like swiveling end wall assembly arrangement, screw jacks for camber setting to facilitate roll out system along with other details side walls clamps, width stopper arrangement etc., were designed and totally manufactured in-house, resulting in considerable saving.

Furnishing division has made in-house test stand for testing single car of Kolkata Metro coaches. This has led to reduction of time taken in test rake from 5 days to 3 days on an average.



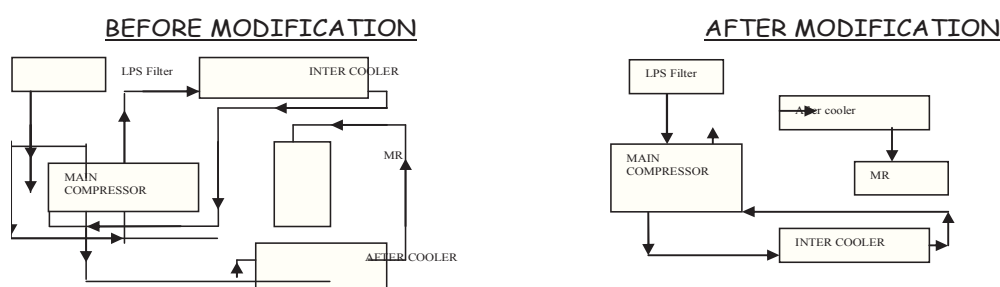
Fitment of FRP window panel in the LACCW coaches resulted in gap around the FRP window panel and thus leakage of air-conditioned air. A change in sequence of FRP window panel fixing was effected in LACCW-2 (FRP window panel was properly inserted into the rubber groove and thus AC air leakage is avoided in the LACCW coaches) the problem was fully solved and air leakage arrested. There was a long pending problem of mismatch of FRP window panel with window glass in LHB ACCW coaches. Gap observed between window panel and window glass resulting in air leakage. This was solved by reorganizing the assembly process after a thorough study by a group of supervisors and staff.



With reference to Drg. 221 35 005 000 01, the brake pipe routing from Compressor to Main Reservoir via inter after cooler has been changed duly designating the inter cooler as after cooler and vice a versa, which will save the following SS pipes and double ferrule fittings. The same has been incorporated from AC EMU M 287 onwards.

### Synopsis of Savings

SS Pipe 1 ½" OD	- 3.01 metres
Union Elbow 1 ½"	- 2 No's
Female Elbow Connector 1 ½" x 1 ¼" BSPT (F)	- 1 No.
Hex Nipple 1 ¼" BSPT	- 1 No.
Male Elbow Connector 1 ½" x ½"	- 1 No.



### **Uptime status of M&P during the year 2011-12:**

- Uptime of 129 Vital & 'A' category machines: 89.26 %
- Uptime of all 603 machines: 94.85 %

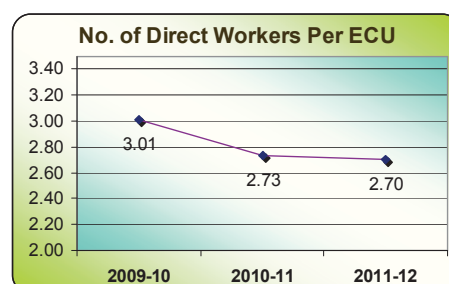
## **3.4 Increase in Worker Productivity**

### **3.4.1 Load Lifted per Direct Worker**

In the year 2011-12, average man-hours of load lifted / Direct Worker per month, which indicates worker productivity, was maintained above 300.

### **Number of Direct Workers Required per Unit Production**

In the year 2011-12 the number of Direct Workers per Equated Coach Unit has come down to 2.70 from 2.73 in 2010-11 with improvement in productivity and with the aid of outsourcing.



### **3.4.3 Special Incentive Scheme**

Special Incentive Scheme approved by Railway Board, has been in force since 2006-07. Salient features of this scheme are: increase in incentive ceiling to 70% with a corresponding overall cut of 3.5% in Allowed Time at the incentive upper limit.

The average incentive earning during 2011-12 was 61.28%.

## **3.5 Suggestions Received**

Constructive suggestions are invited from the employees and the accepted suggestions implemented.

28 suggestions were received during 2011-12. Out of these 28 suggestions, 13 suggestions were accepted, 13 suggestions were not accepted and 2 suggestions are under scrutiny.

## QUALITY SYSTEM

### 4.1 Quality Management System to ISO 9001

ICF has an established Quality System for design, development, manufacture and commissioning of powered, non-powered, air-conditioned and non air-conditioned railway passenger coaches including luxury coaches.

ICF was first certified in October 1996 for its Quality Management System to ISO 9001:1994 version. Later this was upgraded to ISO 9001:2000 version during in January 2003. Further, up gradation audit to the revised standard ISO 9001:2008 was done successfully in November 2009.

During 2011-12 fifth re-certification audit was conducted successfully in November 2011. Validity of the certification has been extended up to 31 January 2015.

### 4.2 Quality Assurance by Inspection Cell

#### 4.2.1 Achievements

- a. 13 Prototype Inspections with Design were conducted for new builds, in addition to regular Inspection, for effective assembly & supply in time.
- b. 38 Joint Inspections with 3<sup>rd</sup> party Inspecting Agency (M/s RITES) were conducted.
- c. 25,251 nos. of QMF002 (Inspection Reports) for defects/deviations issued.
- d. Inspection of Purchased Items

No. of Inspection Demand Notes (IDN) Received	No. Accepted	No. Rejected	No. Returned
5529	4763	697	69

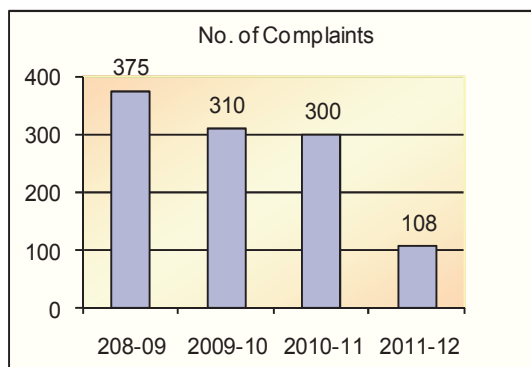
- e. Rolling Stock Certificates Released
  - No. of Rolling Stock Certificates: 1451
  - No. of Inspection Certificates (export): 60
  - Total: 1511

#### 4.2.2 Improvements

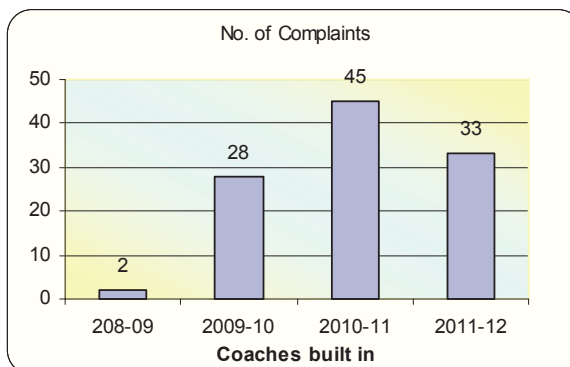
- a. Many modifications were implemented in Kolkata Metro coaches from third rake onwards, based on the feedback on the first two rakes.
- a. Templates have been manufactured for checking the battery box channel and fuel tank in under frame inspection
- b. A gauge has been designed for chair angle in Shop-22 inspection, to maintain it in level so that seat fixing problem will not arise.
- c. Wheel pressing data has been computerized and the records are maintained.
- d. Digital measuring instruments introduced for wheel tread diameter and wheel inner diameter.
- e. Data are recorded in ERP and managerial statements like weekly report, monthly rejection reports are generated.
- f. 100% Roof leak testing carried out and furnishing complaints vastly reduced.

### 4.3 Customer Complaint Redressal

Yearly Trend (Past four years)



Customer Complaints Received in 2011-12



Assistance given to Zonal Railways: 296 customer complaints have been attended to with necessary corrective and preventive actions.

#### 4.3.1 Special Assignment

A team was deputed to Mumbai for conducting a survey on passenger amenities provided in MRVC coaches with a view to considering the suggested improvements in MUP phase-II coaches.

A total of 473 passengers were surveyed regarding passenger amenities and comforts provided in the present MRVC coaches, and the results show that 66.4% passengers are satisfied. Suggestions received for further improvement have been communicated to Design.

### 4.4 Environment-Friendly Activities

#### 4.4.1 Pollution Control

- Noise levels at the sections of various shops of both Shell and Furnishing divisions were monitored.
- Monitoring and measurement activities are being regularly conducted, and all the applicable legal and other requirements are met.
- In ambient air analysis, as per TNPCB norms, seven more parameters have been included for testing in addition to the existing five parameters, seven more parameters have been included for testing and all the 12 parameters have been found to be within the limits prescribed by TNPCB.

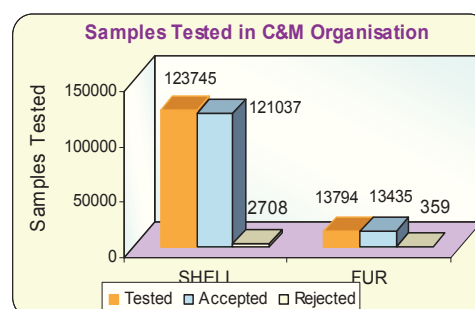
### 4.5 Chemical & Metallurgical Organisation

The Chemical and Metallurgical Organisation of ICF plays an active role in testing and ensuring the quality inputs and processes employed for coach manufacture. The laboratory contributes immensely to Total Quality Assurance in general and Quality Control in particular.

#### 4.5.1 Samples Tested

In the Shell division 1,23,745 samples were tested in the year 2011-2012 out of which 1,21,037 samples were accepted and 2,708 samples were rejected (2.2%).

In the Furnishing division 13,794 samples were tested out of which 13,435 samples were accepted and 359 samples were rejected (2.60%).



#### 4.5.2 Magnaflux Testing of Spring Steel Bars

During the year 2011-12, 32,094 nos. of spring steel bars pertaining to different diameters and lengths were tested by electromagnetic crack detector of which 31,385 nos. were accepted and 709 nos. were rejected (2.21%).

#### 4.5.3 EMCD Testing of Finished Helical Springs

During the year 2011-12, 43,782 nos. of helical springs were tested by electromagnetic crack detector of which 43,112 nos. were accepted and 670 nos. were rejected (1.53%).

#### 4.5.4 Radiographic Testing

During the year a total of 535.6 meters of weld length was tested radiographically, of which 11.8 mtrs. was found to be defective. (2.20%).

#### 4.5.5 Ultrasonic Testing

During 2011-12, 5,669 axles were tested ultrasonically, out of which 4 axles were rejected.

#### 4.5.6 Normalized/Annealed Components

During the year 2011-12, 8,198 nos. of components processed were tested and certified.

#### 4.5.7 Corrosion Prevention & Phosphating

Phosphated components pertaining to 218 charges were tested and certified.

#### 4.5.8 Periodical Testing of Welders

During the year 2011-12, a total of 1,133 welders were tested, of whom 1,119 have passed and 14 welders have failed to qualify in the 1<sup>st</sup> attempt.

DETAILS	Group-A	Group-A	Trade Test
No. of welders tested	960	130	43
No. of welders passed in the first attempt	951	128	40
No. of welders failed	9	2	3
% of failure	0.94	1.54	6.98

#### 4.5.9 Service Engineering – Failure Investigation

Various components received for failure investigations have been investigated and reported, suggesting remedial measures. The list of components is as under.

Sl	Name of the Item	Received From	Reason For Failure
1	Bolster spring (T.NO.1238/M)	SSE/15 dt.02/05/11	Presence of seam
2	Bolster spring (T.NO.1364/M)	SSE/15 dt.11/05/11	Presence of seam
3	Channel(8x214x1898mm) (T.No.1618/M)	SSE/10 Dt.06/06/11	Chemical composition not satisfactory
3	Bogie frame(T.NO.1714/M)	SSE/42/23 dt.25/03/2011	Weld failure
4	BGBolsterspring(T.NO.3085/M)	SSE/15Dt.28/09/11	Presence of seam
5	WTAC/Bolster Spring (T.No.3086/M)	SSE/15 Dt.28/09/11	Presence of seam
6	Centre pivot pin	CRSE/SE RlyDt.21/09/2011	Manufacturing defect, lap
7	Body pillar(2mm sheet)	SSE/10 Dt.18/11/11	Mechanical properties not satisfactory
8	MRVC hand hold items	SME/DSSDt.08/02/12	Weld failure



#### 4.6. Quality Audit

Quality audit of the following samples was done during 2011-12:

Sl.No.	Name of the Item	Outcome of the Audit
1	Door lock complete (T.NO.2521/M)	Satisfactory
2	Bogie bolster arrangement (T.NO.3328/M)	Not satisfactory
3	Spring steel rounds-3nos (T.Nos.436,437,438/M)	Satisfactory
4	Sheets-2mm 3.15mm 4mm 6mm (T.No.546/M)	2mm- Satisfactory 3.15mm-Satisfactory 4mm -Satisfactory 5mm-Satisfactory 6mm-Chemical not satisfactory
5	BSS bracket	Welding not satisfactory
6	Plates-8mm 10mm 12mm 16mm (T.NO.595/M)	Satisfactory
7	Electrode wire for MIG/MAG welding (T.NO.4010/W)	Satisfactory
8	BSS Bracket (T.NO.563/W)	Chemical not satisfactory Welding not satisfactory

#### 4.7 Strengthening of Testing Facilities

The following testing equipment has been procured and commissioned during 2011-12:

- 1 Tonne Tensile testing Machine for Rubber testing
- Infra-red Spectrometer for polymer identification
- Plasma Cutting Machine for sample preparation
- 2 Tonne Universal Testing Machine for testing of furnishing materials
- Electromagnetic Crack Detection Machine for testing of finished springs.
- Automatic loading & digital Brinell Hardness testing machine
- Flash Point Apparatus (Pensky Martin Type)
- Digital Ultrasonic Flaw Detector
- 2 Nos of Vertical Band-saw machine
- Corrosion Cabinet for paints

## 4.8 Training

### 4.8.1 Advanced Welding Training Institute (AWTI)

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.



### 4.8.2 Railway personnel trained

Sl. No	MODULE	2010-11	2011-12
1	Beginners welding course in MMAW - Module I - 4 Weeks	44 (SR 20, SCR 13, WR 2, NWR 6 & KM 3 )	108 (SR 103&SCR 5)
2	Refresher welding course in GMAW - Module II- 3 Weeks	90 (SR 43, SCR 19, SWR 4, ER 16, NW 6 & NCR 2 )	99 (SR 44 SCR 54 & SWR 1)
3	SS Artisan welding course - Module VIII 6 days	37 (ICF 9, SR 15, SC 8, CR 1 & WR 4)	33 ( SR 22 & SCR 11)
4	Supervisor SS welding course - Module IX - 6 days	140 (ICF 125 , SR 1, NWR 7, NCR 2 & SC 5)	116 (ICF 114, SR 1 & SCR 1)
	TOTAL	311	356

**4.8.3** It is planned to utilize 100% capacity (160 trainees p.m) during 2012-13.

### 4.8.4 Technical Training Centre

The Technical Training Centre of ICF imparts sound training to apprentices in various trades like Welder, Fitter, Machinist, Carpenter and Painter. More than 350 apprentices are trained at TTC every year.

TTC is equipped with all the necessary facilities to impart basic knowledge of technical trades.

#### 4.8.5 Placement of Apprentices

TTC/ICF has acquired reputation as a thorough all-round trainer of apprentices, who are much in demand in the job market. Placement assistance is provided to them and many premier organizations are visiting ICF for campus recruitment of ICF apprentices as technicians.

#### 4.8.6 Training Programmes Executed in 2011-12

##### a. Initial Courses

S.No.	CATEGORY	No. of trainees
1	Technician Trainees Mechanical and Electrical (DR+CGA+PQ)	63
2	Apprentice Mech (Mech/Elec)	25
3	Act Apprentice	704
4	BOAT Apprentice (Diploma & Graduate)	19
Total No. of trainees		811

##### b. Referesher Courses for Other Railways

Category	No. of trainees
Supervisor Trainees	220
Artisan Trainees	309
Total No. of Trainees	529

##### c. Pre-Promotional Courses

Types of Courses	No. of trainees
Pre promotional course to Gr.D to C staff	203

##### d. Specialised Courses

Sl.No.	Title	Total Participants
1	Supervisory Development Programme (SDP)	176
2	Disaster Management Programme (DMP)	117
6	Computer course for supervisors	227
7	In-plant/Project Training for Engineering Students	3600
8	LHB Course	163
9	CNC Course	52
10	Mechatronics	22
11	Basic Maintenance Techniques	27
TOTAL		4384



## **DESIGN & DEVELOPMENT**

### **5.1 Development of New Design Coaches during 2011-12**

#### **5.1.1 Emission Test Car**

During 2011-12, ICF developed Emission Test Car, which is the first of its kind on Indian Railways. The design has been developed on LHB platform and coach body including sidewall, roof and end wall is made out of stainless steel. It will be used to measure emission levels on diesel locomotives, DEMUs and power cars and will help in laying down emission standards for rolling stock on Indian Railways.

The Emission Test Car houses emission gas testing equipment supplied by M/s. Horiba, Japan. Among other features, the ETC also has 50 kVA DG set, staff room and mini pantry. It is provided with three level back up for power supply and is fully air conditioned. Exterior color scheme has been specially designed to emphasise green energy.

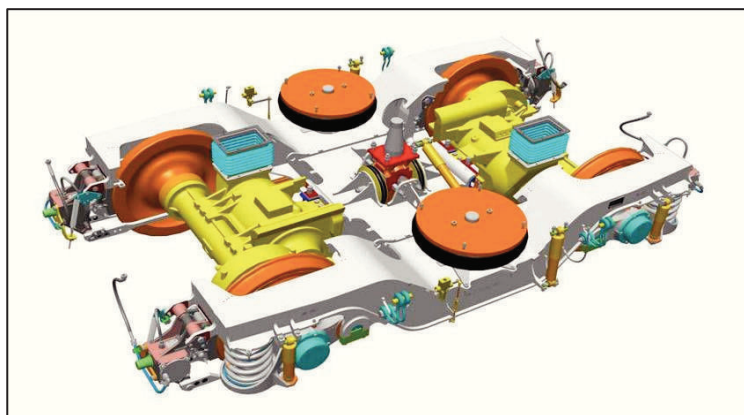
#### **5.1.2 AC-AC 1600HP Stainless Steel DEMUs with straight side wall**

In order to increase reliability, reduce maintenance and to increase carrying capacity, for the first time on Indian railways ICF designed 1600 HP IGBT based AC/AC DEMU. This has 10 coaches against 8 coaches in a conventional 1400 hp DEMU.

Based on experience gained while designing Sri Lanka DEMUs, it was decided to use stainless steel for shells of 1600 HP DEMU also; SS-409M for side and end wall and SS-304 for roof. The design is broadly based on LHB platform. These DEMUs are designed with state-of-the-art features like FRP paneling, GPS-based audiovisual information system, remote monitoring of diagnostics, ergonomically designed driver's desk and stainless steel luggage racks and partitions. Type testing of engine and electrics has been completed.

#### **5.1.3 MRVC coaches for Central Railway with Siemens Bogies**

Under MUTP phase I project, ICF has undertaken manufacture of 134 AC-DC EMU rakes with IGBT technology for Mumbai suburban sections. Out of these, 54 coaches (6 nos. of 9 car rakes) are slotted for manufacture with Siemens make imported bogies while the rest of the rakes are turned out with ICF bogies. Siemens bogies are of bolster-less design with TBUs. Provision of these bogies required design changes of under frame. The drawings for under frame were prepared and issued for 10 variants of MRVC coaches. One rake with Siemens bogies has been turned out and is undergoing oscillation trials.



#### **5.1.4 SPART**

Self-Propelled Accident Relief Train (SPART) is a 3 coach formation consisting of tool van, supervisory van and medical van. This does not require locomotive for hauling, hence enables quick start of the relief train in case of emergency. ICF turned out one SPART with ZF transmission during November 2009. Orders were placed for supply of hydraulic transmission system for another 13 rakes, 12 with Voith transmission and 1 with ZF transmission.

Design for SPART with Voith transmission was evolved and drawings were issued. Shells for 1<sup>st</sup> rake are manufactured and Type testing of equipment has been completed.

#### **5.1.5 AC EMU Motor Coaches with Nosecone**

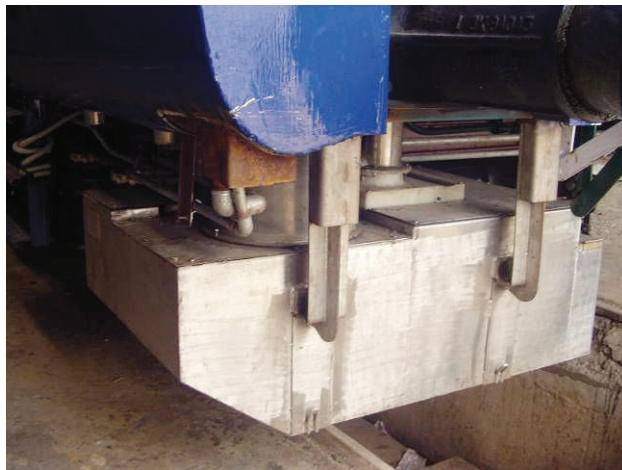
Traditionally, AC EMU motor coaches are turned out with canopy design at the front end. This is a flat end and is not aesthetic. Moreover since this has to be built up from scratch, it involves high cycle time of production. Based upon experience gained while designing MRVC rakes with metal nose cone, it was decided to switch over to nose cone design in AC EMU motor coaches also. Drawings were prepared and issued. From 2012-13, all AC EMUs will be turned out with metal nosecone.



#### **5.1.6 Bio toilets**

ICF has been working on environment-friendly toilets and in past provided CDTs toilets on mainline coaches. To improve further bio-toilets have been developed in association with DRDE, Gwalior. These work on principle of anaerobic bacteria, where fecal matter is biologically disintegrated and innocuous discharge is let out.

For the first time a rake of 23 coaches fitted with 44 Nos. of bio-toilets was despatched. The rake is plying between Guwahati and Egmore (15629/15630 Express). Salient features of these bio-toilets are that these are made of stainless steel, have a solid-liquid separator and PLC for pressurized flushing.



Bio-toilet fitted in coach No. ACCW 739

### 5.1.7 AC/EMUs for Central Railway

ICF has been manufacturing AC/DC EMUs for C.Rly and W.Rly to cater to dual traction requirements of Mumbai suburban sections. Due to conversion of DC traction into AC on certain sections of Central Rly there has been a need for manufacture for AC EMUs. Since 12-car AC/DC EMUs with improved features like polycarbonate seats, stainless partitions, hand holds and luggage racks were already running on the railway, it was decided to turn out AC EMUs also with similar improved features and layout. Drawings were prepared and issued for 7 new layouts of AC EMU coaches. 6 AC EMU rakes for Central Rly, were manufactured and turned out during 2011-12.

### 5.1.8 AC/EU Motor Coach with Modular Transformer

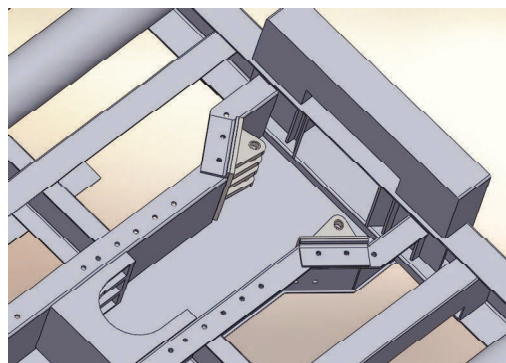
To bring ease in installation and reduction in belt time, the concept of modular transformer was evolved. The provision of modular transformer required a change in underframe as well as in LT and HT room. Drawings were prepared and issued for AC/EMU motor coach with modular transformer.

## 5.2. Improvement in Coach Design

### 5.2.1 Improvements in Mainline Coaches

#### Universal head stock

Currently non LHB mainline coaches are being turned out with screw coupling. CBC couplers are technically superior and are being provided on LHB and crash worthy coaches. To enable fitment of CBC at a later date, ICF has evolved the concept of universal headstock, which can accommodate both screw coupling as well as Centre Buffer Coupling. The drawings of universal headstock were made and FEM analysis been done. The stresses are found within the limits and the drawings/details have been forwarded to RDSO for validation and implementation.



*3D model of Universal Headstock*

#### Standardisation of seats

The seats of DEMU and SCZ coaches are standardized to bring ease in procurement, flexibility in manufacturing and better comfort for the passengers with increased leg space and improved seat profile. Also as the seat is made with SS tubular frame, the corrosion problem will also be eliminated



*Standardized chair car seat for DEMU and SCZ*



- The design of two piece water tank has been modified by increasing the number of surge openings from 2 to 3, introducing a single cast plate in place of two, adding front interconnection and increasing the sheet thickness from 4mm to 5mm.
- In order to improve the corrosion resistance and consequently, the life of water tanks, SS under slung water tanks are introduced in place of MS galvanized water tanks for conventional AC coaches.
- Guidelines have been issued to Zonal Railways for repair procedure to arrest cracks in body bolster of LHB Hybrid coaches.
- Drawings have been issued for spring-loaded arrangement in bed-cum-backrest of First AC coaches for ease in handling and to avoid sudden falling.
- Folding tables have been introduced in the handicapped compartment of SRD coaches.
- Elongated holes have been introduced in the turn under portion of side wall sheet of GS, SLR and WCB coaches to avoid water stagnation.
- CRF trough floor with standardized floor bearer has been introduced for ACCW, FACCW and SCZAC coaches.
- Drawings have been issued for bridging channels to enable fitment of bio toilets in conventional coaches at a later date. These channels are fitted in furnishing division in the coaches already moved out of Shell Division.

### 5.2.2 Improvements in Kolkata Metro coaches

- Design of the emergency ramp has been modified by incorporating steps in the ramp for easy and safe evacuation of passengers in emergency.

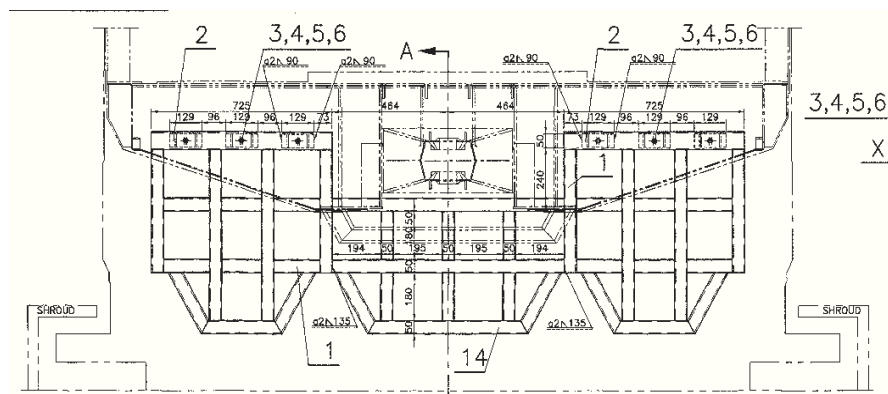


*Improved emergency exit for Kolkata Metro coaches*



*Modified electrical cubicle door for Kolkata Metro coaches with inspection door*

- Design of electrical cubicle door has been modified by incorporating inspection door for easy maintenance.
- Protection frame design at cow catcher has been modified to protect electrical equipment in Driving Motor Coach in case of cattle run-over.



*Middle protection frame for Kolkata Metro coaches*

- Bogie piping layout has been improved by way of changing the pipe layout from outside of bogie to inside. It will avoid rubbing of hoses with TRCC frame.
- Design of RMPU trough has been revised to avoid water spilling over transformer.

### **5.2.3 Improvements in EMUs**

- The design of seat adjacent to equipment room has been revised from partition-mounted to floor-mounted so that these seats can be fixed irrespective of the status of work in equipment room.
- As a trial on one MRVC coach, PVC flooring was provided below the seating area Aluminium chequered plate in the aisle and door way area. This will help replacement of worn out flooring in door way and aisle area without removing the seats.
- To overcome problems of water leakage and shearing of mounting bolts, mounting arrangement of AHU has been modified by shifting it to roof top.
- FRP window inner frame has been introduced in place of aluminium inner frames in MRVC/SS coaches for improving the aesthetics and for preventing pilferage.
- Cant rail has been standardized for AC EMU and AC/DC EMU coaches.
- Driver's seat of MRVC coaches has been standardized in line with the driver's seat of Sri Lanka DEMUs.

#### 5.2.4 Improvements in DEMUs

- First 1600 HP IGBT controlled stainless steel DEMU is being manufactured by ICF. In order to validate the design, squeeze test on the first shells of Trailer Coach and Diesel Power Car was carried out at the strain gauge testing laboratory at the D&D center in association with officials from the testing directorate of RDSO/ Lucknow.

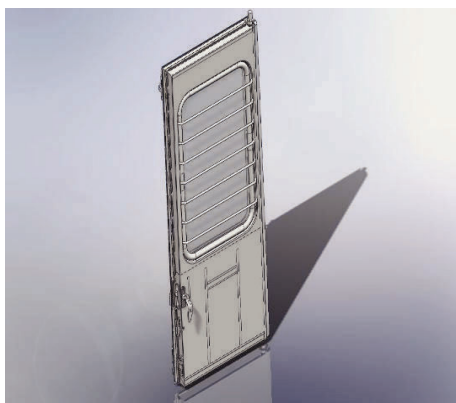


1600 HP DEMU TC under squeeze test



Stainless steel nosecone

- Stainless steel nosecone had been designed for DPCs of 1600 HP DEMU. The item is fitted on shells successfully. Based upon the experience gained from it, ICF has planned for SS nosecone for MRVC-Phase-II rakes also.
- Modified cattle guard design with snow cutting features has been introduced for J&K DEMU/DPC.
- Spacer ring has been introduced between wheel hub and abutment piece to avoid lateral play of motor suspension unit.
- The design of RMHU frame cover has been revised by changing it to FRP cover in place of steel covers to reduce weight and to bring in ease during maintenance.
- The body side doors of J&K DEMUs have been redesigned by providing double sealed windows similar to AC coaches and with provision of window bars in order to avoid breakage of window glasses and falling of glass.



Improved body side doors for J&K DEMU



Stiffeners have been added to sole bar of DPC Coaches to avoid deflection and cracking

- A detailed analysis including FEA was carried out to overcome the problem of sole bar cracking in DEMU/DPC. Based upon FEA results, the sole bar is strengthened, by providing additional cross members and stiffeners on the sole bar. The strengthening procedure has also been advised to Zonal Railways for implementation.

#### **5.2.5 Improvements in Sri Lanka DEMUs**

- In order to prevent damage to FP and BP hoses during cattle guard hitting any obstacle, the location of FP and BP cocks has been raised above the cattle guard.
- Design of vestibule foot plate has been modified by welding additional stiffeners below the vestibule foot plate to arrest sagging.
- Nosecone of Sri Lanka DEMU is modified by adding hood for headlight to avoid ingress of water into head light.
- Sliding door tread plate design of Sri Lankan DEMU has been modified and the location of pivoted door has been shifted to avoid rain water ingress into compartment.
- Wiper arms have been switched over to SS 304 from IS 2062 for better corrosion prevention.
- Revised layouts and technical offer for design and manufacture of the 70 feet length coaches for Sri Lankan Railways have been prepared and sent as per the requirements of RITES/ Sri Lanka Railways. The coach types are:
  - Second class coach (with fixed bucket type cushioned seats)
  - First class AC chair car (with reclining seats) and
  - Third class cum buffet car
- Spare parts catalogue for Sri Lankan DEMU coaches as per the requirement of Sri Lankan Railway has been prepared and sent.



### **5.3 Design Verification/ Validation**

Finite Element Analysis has been performed for the following:

- Strengthening of under frame and deflection for DPC shell
- Modular frame structure for mounting under-slung water tank suspension JDCC arrangement
- Shell with strengthened of under frame
- SS under slung water tank
- End plate of SS water tank
- DMU/TC/SS shell
- 1600 HP DMU/DPC/SS shell
- Universal headstock compatible with CBC
- Stopper bracket on head stock for SV/DPV3 & ARTV5 coaches.
- Rectification procedure for LHB-Hybrid Body Bolsters
- Bio-digester toilets mounting arrangement



## **5.4 Other Improvements**

### **5.4.1 Low Roof fixture for Body shell**

Drawings for low roof body shell assembly fixture are prepared and issued. The fixture is under erection. Once commissioned, it will help in reducing the overhead crane requirement for movement of underframes and body shell.



*Low Roof fixture for Body shell*



*Welding fixture for J Bracket*

### **5.4.2 Welding fixture for J Bracket**

Bio-toilets require welding of J Brackets on the under frame to hold the retention tanks. Though the retention tanks will be mounted in Furnishing Division, the 'J' Brackets are to be welded in Shell Division. Hence to properly locate 'J' Brackets at the appropriate location for welding to the under frame, a new fixture has been designed so that mounting of tanks afterwards can be carried out easily.

**5.4.3** Fixture for construction of end wall with WAGO type terminals for Couplers in self propelled vehicles was designed and developed.

**5.4.4** Drawings for conversion of LHB body shell fixture to suit DMU/DPC/SS, DMU/TC/SS and DMU/TC/V/SS have been issued.

**5.4.5.** At present, pantograph bracket on roof of EMU is being manufactured by marking the measurements without the aid of fixture. A new fixture for manufacturing this equipment has been designed and manufactured for better control over dimensions. Modification has been carried out in the low roof under frame welding fixture to suit manufacture of under frame for Kolkata Metro.

**5.4.6** Common Welding fixture has been developed for stop arrangement of under frame Middle Part to Drawing No.ICF/SK3-1-1-135.

**5.4.7** New welding fixtures have been designed for body bolsters of Kolkata Metro coaches to drg. No. 384-1-1-003 alt'b' and DMU/DPC coaches to Drg. No. 199-1-1-508 alt'l' due to revision of welding and assembly procedures.

**5.4.8** Anti-skid stainless steel chequered floor is provided in 1600 HP DEMU. The provision of SS chequered floor will have better corrosion prevention and more life. MRVC Phase-II coaches are also planned with it.

**5.4.8** For the first time, Diesel Power Car (DPC) of DEMU has undergone rain gauge testing in order to validate the design.

## **EXPORT**

### **6.1**

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, 571 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 2012 are furnished at Annexure – I.

### **6.2 EXPORT PERFORMANCE OF ICF DURING 2011-12**

#### **6.2.1 Sri Lankan Railways**

ICF bagged the order for 20 six-car DEMU train sets to Sri Lanka Railways through M/s. RITES.

The composition of one DEMU train set is as follows.

Type of Coach	Quantity
Driving Power Car (Economy Class)	1 No.
Trailer Car (Business Class)	1 No.
Trailer Car (Economy Class)	3 Nos.
Driving Trailer Car (Business Class)	1 No.

Five Train Sets were manufactured and shipped to Sri Lanka during 2010-11 and ten more during 2011-12. The balance five train sets will be manufactured and shipped during 2012-13.

#### **6.2.2 Spares for Sri Lanka Railways**

Maintenance spares worth Rs.12.78 lakhs were manufactured/procured by ICF during 2011-12 against Purchase Order placed by RITES and exported to Sri Lanka.

### **6.3. DOMESTIC MARKET – NON-RAILWAY**

#### **6.3.1 Defence Research & Development Organisation**

- Quotation for manufacture and supply of 2 Jet Deflector Crane Cars has been submitted to DRDO.
- Quotation for manufacture and supply of 3 bogies for JDCC coaches and 2 bogies for ICC coaches has been submitted to DRDO.

ANNEXURE - I							
DETAILS OF EXPORT (Up to 31.03.2012)							
Details of products exported to various countries since inception are as follows:							
SL.NO.	YEAR	TYPE	NO. OF STOCK EXPORTED			COUNTRY	COST (Lakhs)
			BOGIES	SHELLS	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 (1067MM)	100			TAIWAN	21.00
6	1971-72	CG COACHES (1067MM)			113	TAIWAN	398.96
7	1974-75	CG BOGIES (1067MM)	32			TAIWAN	22.77
8	1978-79	CG BOGIES (1067MM)	64			TAIWAN	63.23
9	1978-79	CG BOGIES (1067MM)	48			TAIWAN	53.76
10	1973-74	CG COACHES (1067MM)			6	ZAMBIA	14.81
11	1975-76	CG COACHES (1067MM)			30	PHILIPPINES	224.88
12	1978-79	CG COACHES (1067MM)			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 (1067MM)			32	NIGERIA	293.86
17	1984-85	MG COACHES			9	BANGLADESH	120.60
18	1986-88	MG COACHES			61	BANGLADESH	880.51
19	1984-85	CG COACHES (1067MM)			15	MOZAMBIQUE	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 (1067MM)			24	ANGOLA	1766.00
24	2007-08	CG COACHES (1067MM)			32	ANGOLA	3821.00
25	2010-11	BG COACHES			30	SRI LANKA	2743.19
26	2011-12	BG COACHES			60	SRI LANKA	6583.65
		TOTAL	359	11	571		21928.46
		SPARES					461.50
		GRAND TOTAL					22389.96

# **INDUSTRIAL SAFETY**

## **(i) Occupational Health & Safety Management System**

Occupational Health & Safety Management System (OHSAS) to BS 18001:2007 has been merged with the Environmental Management System (EMS) to ISO 14001:2004.

Second surveillance audit on Integrated EOHS (ISO 14001:2004 & BS18001:2007) by M/S TUV Nord has been successfully complied with during the year under review.

## **(ii) Steps taken towards Industrial Safety**

- All industrial safety-related statutory requirements are complied with.
- All accidents are investigated and analyzed, and on-site studies done for suggestions and remedial measures.
- Safety awareness programmes conducted in co-ordination with Inspectorate of Factories, National Safety Council, Loss Prevention Association, etc.
- Safety awareness materials like safety posters, safety stickers, safety slogans are arranged to create awareness among employees.
- Plant safety inspections are conducted to identify the hazards and suggest remedial measures.
- First aid training and basic firefighting organized for supervisory and artisan staff.
- Preparation and issue of On-site Emergency Plan (OSEP) duly covering various emergencies such as fire, leakage of gas, handling & storage of chemicals
- Specification is framed and technical scrutiny carried out for Personal Protective Equipment and safety items.
- Periodic eye examination for FLT drivers, Crane Drivers and Serangs is monitored.
- Employees are counselled towards safety rules and regulations
- National Safety Day (4<sup>th</sup> May), Fire Service Week (14-20 April) and Environment Day (5<sup>th</sup> June) are celebrated by taking safety pledge, green pledge, display of banners, etc.

## **(iii) Safety Review Meetings**

Safety review meetings are held periodically to discuss and resolve safety-related issues.

- Weekly meetings - Chaired by Dy.HoDs
- Monthly meetings - Chaired by PHoDs

Quarterly meetings (Headquarters Safety Committee meeting) - Attended by Management and Staff Council



**(iv) Personal Protective Equipment Issued**

PPE Issued	To protect
Helmet, leather cap	Head
Goggles, face shield	Eyes
Ear plug ear muff	Ears
Dust mask, nose mask, organic nose mask	Nose
Welders' hand shield, face shield	Face
Leather apron, canvas apron	Body
Leather hand gloves, rubber gloves, acid-resistant gloves, leather hand sleeve	Hand
Safety shoes, hot zone shoes, electrical shoes, ladies safety shoes, leg guard	Legs

**(v) Accident Statistics – 2011-12**

Description	Shell Division	Furnishing Division
No. of Accidents	43	19
Man-days Lost	1413	6904

## **PROJECTS**

### **7.1 The status of the various Projects is given below:-**

S.N	Project	Sanction Detail	Sanctioned Cost in Rs crores	Financial Progress	Physical Progress	PDC
1.	Modernization and expansion of ICF to manufacture technologically upgraded coaches with increased production capacity from 1500 coaches to 1700 coaches per year.	Item 75 of 2010-11	252.04	Details are furnished below.		
2.	Augmentation of spring manufacturing facilities	Item 10 of 2004-05	37.96	RE submitted to Railway Board during Dec'11. Brief note enclosed.		
3.	Augmentation of capacity for manufacture of 1500 coach per annum.	Item 21 of 2006-07	77.80	83.20%	95.00%	Dec'12
4.	Augmentation of capacity for manufacture 1250 shells	Item 14 of 2005-06	11.86	89.80%	100%	Completed during 11-12
5.	Augmentation/upgradation of facilities for MRVC EMUs	Item 7 of 2002-03	56.07	66.50%	90.00%	Jan'13

A brief of the above projects is given below:-

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

Board's sanction was communicated vide their letter No. 2010/M(W)/964/28 dated 30.03.2011 for an amount of Rs 249.58 crore for the project.

Board's approval for entering the composite work (Civil, Electrical and Mechanical) excluding the portion of work related to manufacture of FIAT Bogies to COFMOW on turn key basis was received vide their letter No. 2010/M(W)/964/28 dated 01.04.2011. Board vide their letter No. 2010/M(W)/964/28/FIAT Bogies dated 01.04.2011 have advised that portion of work related to manufacture of FIAT bogies is also to be executed on turn key basis and the feasibility of awarding this work to RITES to be explored by ICF.

It was decided in the meeting held on 20.04.2011 that the scope of work by RITES would be procurement of M&P, foundation work and commissioning of machines on turnkey basis for FIAT Bogie shop. ICF shall undertake the construction of FIAT bogie dhop, including electrical works.

COFMOW has planned to execute the shell manufacturing facilities in three tenders. Tender-1 was opened on 21.10.2011 and discharged. The re-tender was floated on 20.02.2012 and opened on 27.03.2012.

Tender-2 was opened on 28.11.2011 and discharged. Retender floated on 4.03.2012 and to be opened on 17.04.2012.

The draft tender document submitted for Tender-3 was submitted to COFMOW on 10.01.2012.

ICF Civil Tender-1 for construction of shed for bogie manufacturing facility by ICF was opened during 29.07.2011 and LOA issued on 05.12.2011. Work is in progress. ICF civil Tender-2 for construction of office accommodation, sub-station etc by ICF has been opened on 03.08.11. LOA issued on 27.01.2012. Work is in progress. Scope for the ICF civil Tender-3 for construction of approach road, compound wall etc is Finalisation and expected to be floated during Apr'2012.

In view of inclusion of one coil spring scragging & load deflection testing machine for Fiat bogies (LHB) spring at a cost of Rs 2.65 crores under material modification, revised detailed estimate at a cost of Rs 252.04 crores was sanctioned by Railway Board on 18.11.2011. The indent for the same was submitted to COFMOW on 19.11.2011.

#### Current status

(Values in Crores)

Sanctioned Cost	Budget Grant for 2011-12	Expenditure During 11-12	Cum. Expenditure up to 11-12
252.04	0.304	0.302	0.302

#### **7.1.2 Augmentation of spring manufacturing facilities.**

All the civil engineering and electrical works was completed. One Load testing machine which was commissioned & PTC was issued.

Mega indent for the procurement of 11 M&P on turnkey basis costing Rs. 29 crores had been submitted to COFMOW during Oct'2007. A global tender (No: G-521 - two packet system) opened on 3.11.2009 by COFMOW and was discharged during Jan'11, due to non-meeting of qualifying requirements by bidders.

Vide letter no. COFMOW/IR/M-212/2 dated 21.03.2011 COFMOW has returned the indents for re-validation of the cost for re-floating the tender.

Considering the current scenario the project is reviewed with the following provisions:

- There shall be an unfulfilled demand for coiled springs even up to the year 2020 i.e when air spring is fitted in all coaches in secondary suspension and RSK will be producing 1,50,000 springs.
- Improvement in manufacturing technology to meet RDSO specification and on the lines of RSK will necessitate more space and M&P requirements. Within the space constraint it is proposed to procure fully machined bars and undertake the coiling process/inspection & final testing at ICF.
- With improvement in coiling process it is expected that ICF will be able to produce 75000 springs per annum.
- The revised estimate at a cost of Rs 87.45 crore duly vetted by Finance and approved by GM submitted to Railway Board on 30.12.2011. Subsequently clarification sought by Board was advised on 12.03.12.

### 7.1.3 Augmentation of capacity for manufacture of 1500 coach per annum

All the M&P except the following M&P sanctioned in the project have been received and commissioned.

1. EOT Crane 5Tons - 1no. Yet to be ordered.
  2. X-Ray Machine -1 no. Probable date of supply: June'12
- Two numbers of Air compressors 1000 CFM were received on 05.09.2011 and commissioned on 26.11.11 & 28.02.12. Proving Test Certificate (PTC) issued on 20.03.2012.
  - Two numbers of Magnetic skin tensioning machine received on 2.3.10 and are under commissioning. Two more skin tensioning machines received on 8.12.10.
  - PTC was issued for 20 ton EOT crane installed at stores on 29.09.2011.
  - PTC was issued for 10 ton EOT crane installed at New Bogie Assy Shed on 25.05.2012.
  - All the Civil & Electrical works are completed except flooring and provision of track in IV bay of Shell Assembly shed.

#### Current status

Values in Rs crores

Sanctioned Cost	Budget Grant for 2011-12	Expenditure During 11-12	Cumulative Expenditure up to 11-12	Financial Progress	Physical progress
77.92	1.28	6.04	64.85	83.20%	95.00%

### 7.1.4 Augmentation of capacity for manufacture 1250 shells

All the Civil & Electrical works completed. All the M&P sanctioned in the project were received and commissioned. Final Expenditure Statement (FES) pertaining to all Mechanical works submitted to Finance. FES pertaining to Electrical & Civil is under compilation. Completion report is expected to be completed by Oct'2012.

Values in Rs crores

Sanctioned Cost	Budget Grant for 2011-12	Expenditure During 2011-12	Cumulative Expenditure up to 2011-12	Financial Progress	Physical progress
11.86	0.43	0.11	10.64	89.80%	100%

### 7.1.5 Augmentation/Upgradation of facilities for MRVC EMUs

All Electrical, Civil works are completed. All M&P have been received and commissioned except one Welding manipulator ordered on IGM/Austria, which is expected during July 2012. FES for the completed works under submission.

#### Current Status:

Values in Rs crores

Sanctioned Cost	Budget Grant for 2011-12	Expenditure During 11-12	Cumulative Expenditure up to 11-1	Financial Progress	Physical progress
56.07	0.46	0.69	37.26	66.50%	90%

#### M&P WORKS:-

- 1.1 During 2011-12, 21 machines costing about Rs 14.33 crore were received through COFMOW procurement, out of which 15 machines have been commissioned and 6 machines are under commissioning.
- 1.2 15 nos of M&P costing about Rs 1.2 crore were procured through COS/ICF and commissioned.

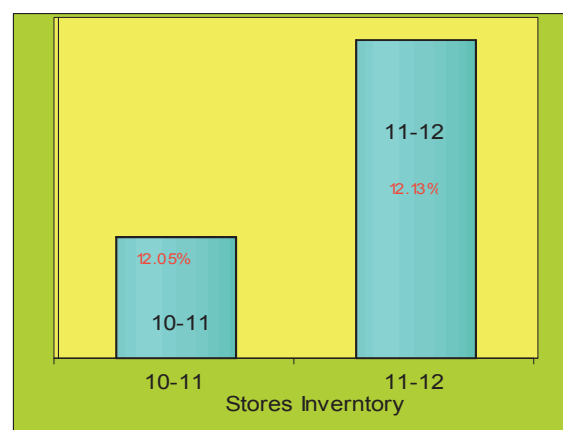
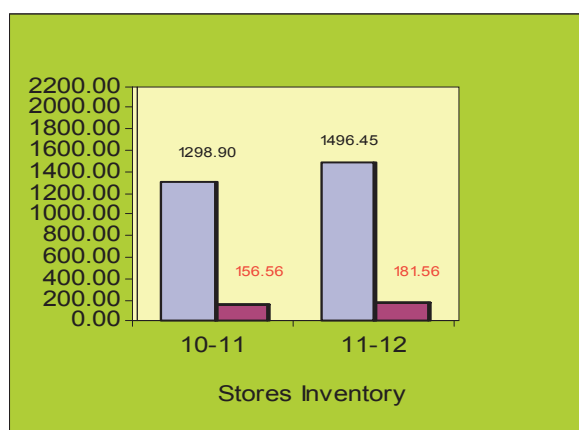


## **STORES**

### **8.1 GENERAL:**

**8.1.1** Materials Management in a Production Unit throws much tougher challenges to any Materials Manager to ensure 100% availability of all required items for production & at the same time meeting challenges under given budgetary provisions and also maintaining a optimum Turn Over Ratio in the order of 12%. However, the Stores Department lived up to its expectation of meeting all these challenges well in this year too. The year of 2011-12 posed really tough challenges with as many as 49 different variants of coaches( Kolkata Metro, MRVC, Srilankan coaches etc.) to be manufactured with frequent changes in the production programme, which was a Herculean task for any professional Materials Manager. It was a matter of great satisfaction that ICF surpassed the previous best of 1503 coaches in 2010-2011 by producing all time high production of 1511 coaches in 2011-12. This was possible with a systematic co-ordinated efforts at all levels by ensuring 100% availability of material well within time.

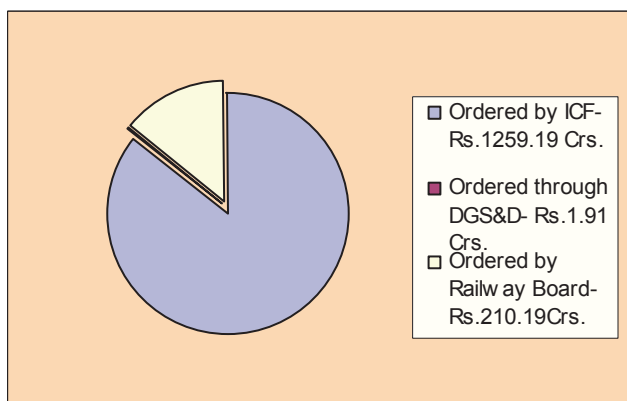
**8.2** The Gross Issue Value under Stores Suspense was Rs.1496.45 Crores (2011-12) as against 1298.90 Crores in 2010-2011. The Stores Suspense closing balance was marginally higher than the last year i.e.Rs.181.56 Crores as on 31st March 2012 as compared to Rs.156.56 Crores achieved on 31<sup>st</sup> March 2011. The Inventory Turn Over ratio as on 31<sup>st</sup> March 2012 was 12.13% as compared to 12.05% on 31<sup>st</sup> March 2011.



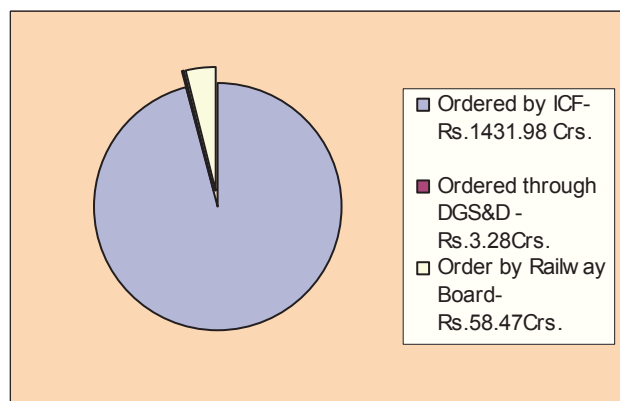
### **8.3. VALUE OF RAILWAY EQUIPMENT AND STORES ORDERED.**

**8.3.1** The value of Railway Equipment and Stores ordered during 2011-12 as compared with 2010-11 through various agencies is as follows:

		(Value in Crores of Rupees)	
		2010-11	2011-12
a)	Value of Equipments and Stores ordered through Department of Supply :	1.9	3.28
b)	Value of Equipments and Stores ordered through Railway Board :	210.19	58.47
c)	Value of Equipments and Stores ordered direct by ICF		
i)	Through Import 5.10 :	0.00	
ii)	Imported Stores purchased in India :	0.00	0.00
iii)	Indigenous Stores :	1259.19	1431.98
Total Value of Stores and Equipments ordered :		1471.29	1498.83



**Total value of Railway Equipments & Store ordered during 2010-11 was Rs. 1471.29 crores**



**Total value of Railway Equipments & Stores ordered during 2011-12 was Rs. 1498.83 crores**

### 8.3.2. VALUE OF STORES PURCHASED:

The details of category wise purchases made during the year 2010-11 are indicated in ANNEXURE-I.

### 8.3.3 PURCHASES FROM COTTAGE AND SMALL SCALE INDUSTRIES:

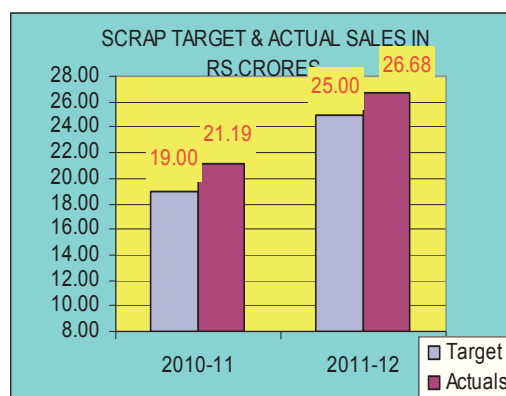
The value of stores purchased (receipts) from Cottage and Small Scale Industries during the year 2011-12 was Rs.268.44 crores as against Rs. 245.40 crores during 2010-11.

### 8.3.4 USE OF KHADI:

The requirement of KHADI items in ICF in the year 2011-12 is Rs.6,51,289 as against Rs.2,11,614 during 2010-11.

## 8.4 SCRAP SALES:

The Total Value of Scrap sold was Rs.26.68 crores in 2011-12 against the target of Rs.25.00 crores and sale of scrap in the 2010-11 was Rs. 21.19 Crs.



## 8.5 MATERIAL SUPPLY POSITION:

### 8.5.1 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 2011-12 was satisfactory and smooth supply of these raw materials was ensured for the production requirements through ICF purchases also, if required.

### **8.5.2 WHEELS, TYRE AND AXLE:**

BG Conventional coaching wheels & Axles and EMU MC Axles and TC Axles are regularly supplied by RWF/Bangalore and SAIL/Durgapur. However, EMU Solid wheels are Imported from abroad and effort are being made to manufacture indigenously by SAIL and supply is expected in 2012-13. The supply position of WTA items are generally satisfactory all over the year through continuous follow up with suppliers and Railway Board.

### **8.6 DISPOSAL OF NON-MOVING AND SURPLUS ITEMS:**

The frequent changes in production programme and changes in design reflected badly in increase of value of these items during this year. The value of Non-Moving items over 24 months as on 31-03-2012 was Rs.811.35 lakhs as against Rs.470.33 lakhs in the corresponding period last year. This was due to LHB items which were not drawn as per the projections made due to stoppage of production of these types of coaches as per advise of Railway Board. The value of items not moved for more than 12 months but less than 24 months as on 31.3.2012 was Rs. 442.18 lakhs as against Rs. 910.38 lakhs last year.

### **8.7 STORES BALANCE:**

#### **8.7.1 OPENING BALANCE AT THE BEGINNING OF THE YEAR 2011-12:**

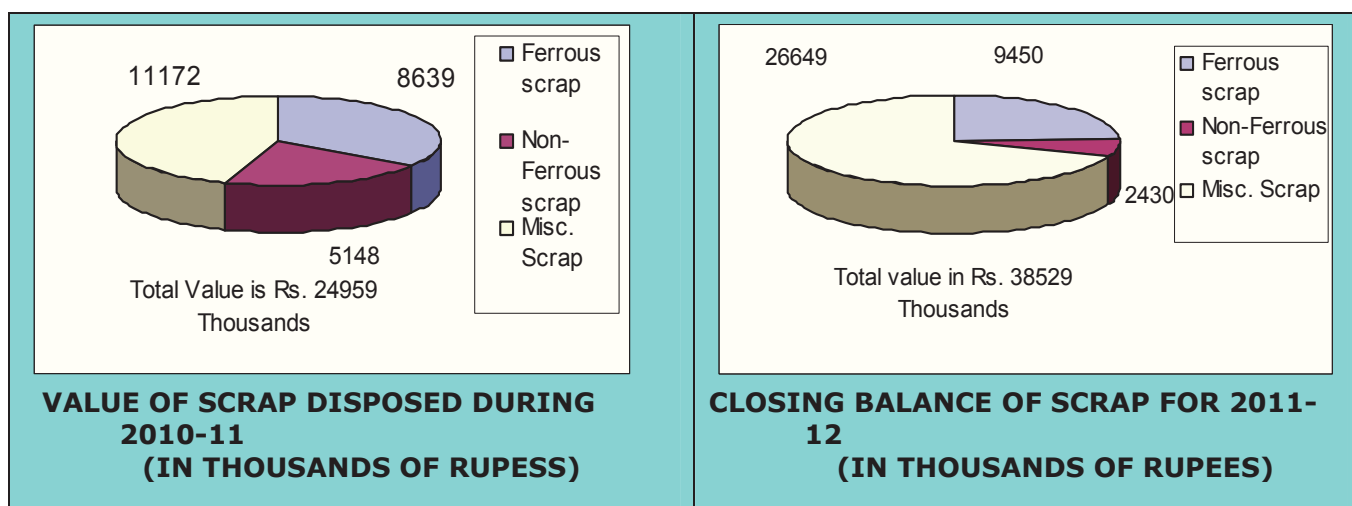
S.No.	Details	Crores
1.	Physical Stores Balance without Adjustment of Cap.P.7160	231.41
2.	Adjustment to Cap.P-7160 (i.e. P-7170 to P-7190)	40.57
3.	Outstanding Suspense Cap.P-7110, 7120, 7130, 7140	34.28
4.	Total Stores Balance from Cap.P-7110 to P-7190	156.56

#### **8.7.2 TRANSACTION OF PHYSICAL STORES CAP. P-7160 DURING THE YEAR 2011--12 & CLOSING BALANCE AT THE END OF THE YEAR 2011-12.**

S.No.	Details	Crores
1.	Receipts	1545.81
2.	Issues	1523.73
3.	Physical Stores Balance w/o adjustment Cap.P.7160	253.49
4.	Adjustment to Cap.P-7160 (i.e. P-7170 to P-7190)	(-) 5.91
5.	Outstanding Suspense Cap.P-7110, 7120, 7130, 7140	(-)66.02
6.	Total Stores Balance from Cap.P-7110 to P-7190	181.56

### 8.8 SCRAP (ARISING AND DISPOSAL) for 2011-12 (Value in '000 of Rupees)

S No.	CATEGORY	OB as on 1.4.11		Receipts during the year 11-12		Disposal/ Issues during the year 11-12		CB as on 31.3.12	
		Qty MTs	Value	Qty MTs	Value	Qty MTs	Value	Qty MTs	Value
1.	Ferrous Scrap including Rails.	441	8639	8954	223850	9016.30	226297	378	9450
2.	Non-Ferrous Scrap.	45	5148	57.5	9315	87	14066	15	2430
3.	Misc.Scrap.	468	11172	2044	42924	1243.4	25768	1269	26649
4.	Total	954	24959	11055	276089	10347	266131	1662	38529



### 8.9 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/-
2010-11	99.33	0.00	0.44	0.13	0.50
2011-12	99.155	0.00	0.0006	0.002	0.51



### 8.10 STATEMENT SHOWING THE UNIT COST OF ISSUES.

The sharp rise in pay & allowances made to employees due to implementation of Sixth Pay Commission recommendations affected adversely the cost of unit issue.

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/-
2010-11	1321.97	9.22	Rs.0.70
2011-12	1448.92	9.39	Rs.0.675

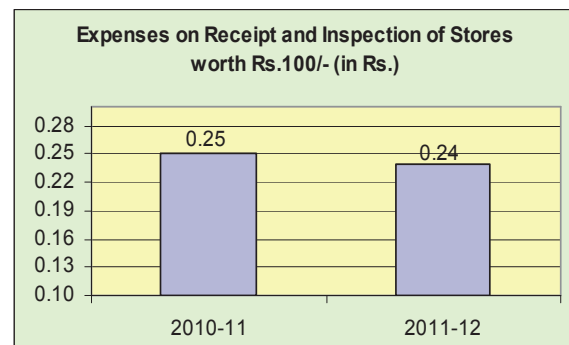
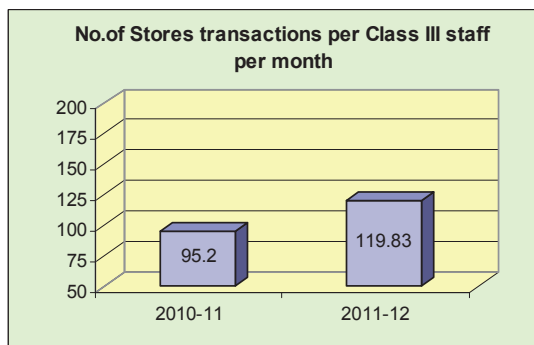
  

The bar chart displays the unit cost of issues for stores worth Rs.100.00 in Rupees for two years. The y-axis ranges from 0.00 to 1.20 in increments of 0.20. The x-axis has two categories: 1 (2010-11) and 2 (2011-12). The cost for 2010-11 is 0.70 and for 2011-12 is 0.67.

Year	Cost (Rs.)
2010-11	0.70
2011-12	0.67

### 8.11 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.
	Receipt Nos.	Issues Nos.	Total Nos.			
2010-11	17113	132514	149627	12470	131	95.20
2011-12	18746	158119	176865	14738	123	119.83



### 8.12 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.)
2010-11	3.34	81	1325.70	0.25	217.00
2011-12	3.13	74	1489.62	0.24	230.00

### 8.13 SUPPLY POSITION OF UNIFORMS

Year	Qty demanded for year 2011	Qty issued for year 2011	Remarks (if any)
Boiler Suits	21483 Nos	21483 Nos	100% compliance
Big Towels	28560 Nos	28560 Nos	100% compliance
Caps	6108 Nos	6108 Nos	100% compliance

**ANNEXURE-I****STATEMENT OF VALUE OF STORES PURCHASED DURING THE PERIOD  
FROM 1.4.2011 TO 31.3.2012.****(Amount in Thousands of Rs).**

<b>Sl. no</b>	<b>Class of Stores</b>	<b>Total for 2010-11</b>	<b>Directly Imported for 2011-12</b>	<b>Imported stores purchased in India for 2011-12</b>	<b>Indigenous Cottage, Public Sec. Inds&amp; others for 2011-12</b>	<b>For the year 2011-12</b>
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.	134975	0	50000	173221	223221
4.	Permanent way material and Track Tools.	259	0	0	184	184
5.	Rolling Stock parts and fittings only (excluding Elec. equipment & Materials)	9555441	51028	0	11319251	11370279
6.	Building materials, Water main, Sewage system and track & Yard enclosing materials, signal & interlocking materials.	1085	0	0	680	680
7.	Small tools, Hardware tools, hard wares, copper, tin, zinc ware, leather, canvas, metal, painting stores, timber, rubber, electrodes fuel oil, furniture etc.	1686776	0	0	1842775	1842775
8.	Electric fittings, wireless equipments, electric traction equipments, telegraph & telephone equipments.	839963	0	0	1230576	1230576
9.	Rolling stock, locomotives of all types, wagon, coaches including electric multiple units complete & others.	269	0	0	0	0
10.	All other stores.	291850	0	0	320597	320597
	<b>TOTAL</b>	<b>12510618</b>	<b>51028</b>	<b>50000</b>	<b>14887284</b>	<b>14988312</b>

**ACCOUNTS & FINANCE**

<b>9.1 STATEMENT SHOWING CAPITAL AT CHARGE AS AT THE END OF 31.03.2012</b>				
		(Figs. in lakhs of Rupees).		
		<b>CAPITAL</b>		<b>CAPITAL FUND</b>
<b>I. FIXED ASSETS</b>				
<u>a) Projects:</u>				
	i) Township	146.93		0
	ii) Workshop & Office	877.53		0
		1024.46		0
<u>b) Additions :</u>				
	i) Township	2543.76		3.66
	ii) Workshop & Office	28422.04		591.38
	Total Additions :	30965.8		595.04
<b>TOTAL FIXED ASSETS ( 1(a) + (b) )</b>		<b>31990.26</b>		<b>595.04</b>
<b>II. FLOATING ASSETS :</b>				
<u>a) Stores Suspense :</u>				
	i) Stores in Stock	25349.66		
	ii) Stock Adjustment Account	-158.53		
	iii) Stores in Transit	-432.64		
	iv) Other Stores Suspense Heads	-6602.46		
		<b>18156.03</b>		
<u>b) Manufacture Suspense :</u>				
	i) Work in Progress	11716.79		
	ii) Labour Suspense	-4013.49		
		7703.30		
<u>c) Miscellaneous Advance Capital:</u>		578.53		
<b>TOTAL FLOATING ASSETS ( II(a)+(b)+ ( c) )</b>		<b>26437.86</b>		
<b>GRAND TOTAL</b>		<b>58428.12</b>		<b>595.04</b>

**9.2 Statement showing the Break-up of Fixed Assets and Additional Expenditure incurred on works for the year ending 2011 - 12**

[Rupees in Lakhs]

[Rupees in Lakhs]				
Sl.No.	Name of the Work/Scheme	Capital		Grand Total
		Township	Workshop	
		[From Inception upto 93-94 and from 01-02]		
I.	<b><u>Fixed Assets:</u></b>			
1	LAND	18.39	11.93	30.32
2	ROAD	5.63	11.00	16.63
3	BUILDING	76.65	252.39	329.04
4	WATER WORKS	12.32	4.36	16.68
5	MACHINERY	0	292.34	292.34
6	ELECTRICAL INSTALLATION	6.99	91.79	98.78
7	GENERAL CHARGES	15.89	90.48	106.37
8	OTHER CHARGES	11.06	123.24	134.30
	Total - Fixed Assets	146.93	877.53	1024.46
	Total - Additions	2543.76	28422.03	31560.83
	Grand Total - [Fixed Assets + Additions]	2690.69	29299.56	32585.29

**9.3 EXPENDITURE BOOKED ON PROJECT ACCOUNT DISTRIBUTED OVER TOWEN SHIP & WORKSHOP UPTO THE END OF 2011-12**

B R E A K - U P	Capital	Capital Fund	Grand Total
T O W N S H I P	2690.69	3.66	2694.35
W O R K S H O P	29299.56	591.38	29890.94
T O T A L	31990.25	595.04	32585.29

**9.4 FINANCIAL EFFECT OF THE INTRODUCTION OF INCENTIVE SCHEME IN ICF**

Division	Average Total Number of employees of Incentive Scheme	Total Amount of Incentive Bonus paid during April 2010 to March 2011 Rs.	Average Incentive Bonus per month per employee			Percentage of Total Time Saved to Total Time Taken
			Direct Worker Rs.	Essential Indirect Worker Rs.	Supervisors Rs.	
SHELL	4509	196175527	4118	2588	4017	59.04%
FURNISHING	3326	191376146	5306	2978	4672	73.33%
SHELL & FURNISHING	7834	387551673	4666	2714	7321	65.78%



## 9.5 DEPRECIATION RESERVE FUND BALANCE

The Opening Balance of the Depreciation Reserve Fund on 01.04.2011., was Rs. (-)14298.40 lakhs. The Fund received on accretion of Rs.1800.00 lakhs during the year 2011-2012. A sum of Rs.2360.91 lakhs was withdrawn from the fund towards the procurement of Machinery and Plant on Replacement Account. The interest for the year 2011-2012 amount to Rs. (-)728.94 lakhs. The balance at the end of the preceding years and current year are shown below.

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

## 9.6 Estimated Cost of Shells - 2011-12

(Figs in thousands of Rs.)

	Type	No.of Shells	Estimated
		turned out in	Cost per
		2011-12	Shell
1	AC EMU B	120	5700
2	AC DC EMU B (GP 194)	12	5900
3	DEMU DPC HHP	28	5400
4	DEMU DPC HHP J&K	8	5800
5	DEMU DPC HHP IGBT	2	6600
6	METRO K M/C	14	4600
7	DEMU TC HHP (GEN)	53	4600
8	DEMU TC HHP (VEN)	30	4600
9	DEMU TC HHP J&K	24	4900
10	DEMU TC HHP (GEN) IGBT	4	4900
11	DEMU TC HHP (VEN) IGBT	2	4900
12	AC DC EMU C (GP 194)	3	5300
13	AC DC EMU D (GP 194)	10	5400
14	AC DC EMU D/HC (GP 194)	2	5200
15	AC EMU C	154	4600
16	AC EMU D	86	4800
17	METRO K T/C	4	4400
18	FCZAC LHB*****	3	12140
19	SCZ AC LHB*****	14	12140
20	WLRRM LHB*****	3	12900
21	SCN HYB	1	5400
22	GS HYB	2	5000
23	SLRD HYB	2	4600
24	FACCW	25	5100
25	ACCW	105	5200
26	FAC	20	5000
27	SCZ AC	20	5100
28	SLRD	85	4400
29	SCN	172	4700
30	GS	339	4500
31	CB	15	4300
32	SCZ	90	4200
	Total	1452	

**9.7 Estimated Cost of Furnishing - 2011-12****(Figs in thousands of Rs.)**

Sl.No.	Type	No.of Coaches	Estimated
		turned out in	Cost per
		2011-12	Coach
1	AC EMU B	120	25000
2	AC DC EMU B (GP 194)	15	43000
3	DEMU DPC HHP	28	29100
4	DEMU DPC HHP J&K	7	29100
5	METRO K M/C	5	40000
6	DEMU TC HHP (GEN)	53	3300
7	DEMU TC HHP (VEN)	30	3300
8	DEMU TC HHP J&K	23	3300
9	AC DC EMU C (GP 194)	15	5100
10	AC DC EMU D (GP 194)	10	5200
11	AC DC EMU D/HC (GP 194)	5	5000
12	AC EMU C	154	2700
13	AC EMU D	86	2800
14	METRO K T/C	3	5300
15	ACCW HYB	3	11200
16	SCN HYB	15	4800
17	GS HYB	6	4200
18	SLRD HYB	2	4000
19	FACCW	21	10200
20	ACCW	100	11000
21	ACCN	10	11000
22	FAC	8	11000
23	SCZ AC	20	10000
24	SLRD	85	2600
25	SCN	180	3400
26	GS	343	3000
27	CB	15	3900
28	SCZ	70	3000
	Total	1432	

## 9.8 Break-up of Provisional Transfer Price of Shells - 2011-12

(Figs in thousands of Rs.)

S.No.	TYPE	No. of	Direct	Direct	Overheads	Total	Proforma	Total Cost
		Shells	Labour	Stores		Mfg.	Charges	including
		turned out in	&			Cost		Proforma
		2011-12	Incentive					Charges
1	AC EMU B	120	570	3420	1710	5700	29	5729
2	AC DC EMU B (GP 194)	12	590	3540	1770	5900	30	5930
3	DEMU DPC HHP	28	540	3240	1620	5400	27	5427
4	DEMU DPC HHP J&K	8	580	3480	1740	5800	29	5829
5	DEMU DPC HHP IGBT	2	660	3960	1980	6600	33	6633
6	METRO K M/C	14	460	2760	1380	4600	23	4623
7	DEMU TC HHP (GEN)	53	460	2990	1150	4600	23	4623
8	DEMU TC HHP (VEN)	30	460	2990	1150	4600	23	4623
9	DEMU TC HHP J&K	24	490	3185	1225	4900	25	4925
10	DEMU TC HHP (GEN) IGBT	4	490	3185	1225	4900	25	4925
11	DEMU TC HHP (VEN) IGBT	2	490	3185	1225	4900	25	4925
12	AC DC EMU C (GP 194)	3	530	3445	1325	5300	27	5327
13	AC DC EMU D (GP 194)	10	540	3510	1350	5400	27	5427
14	AC DC EMU D/HC (GP 194)	2	520	3380	1300	5200	26	5226
15	AC EMU C	154	460	2990	1150	4600	23	4623
16	AC EMU D	86	480	3120	1200	4800	24	4824
17	METRO K T/C	4	440	2860	1100	4400	22	4422
18	FCZAC LHB*****	3	1821	6677	3642	12140	61	12201
19	SCZ AC LHB*****	14	1821	6677	3642	12140	61	12201
20	WLRRM LHB*****	3	1935	7095	3870	12900	65	12965
21	SCN HYB	1	810	2970	1620	5400	27	5427
22	GS HYB	2	750	2750	1500	5000	25	5025
23	SLRD HYB	2	690	2530	1380	4600	23	4623
24	FACCW	25	765	2805	1530	5100	26	5126
25	ACCW	105	780	2860	1560	5200	26	5226
26	FAC	20	750	2750	1500	5000	25	5025
27	SCZ AC	20	765	2805	1530	5100	26	5126
28	SLRD	85	660	2420	1320	4400	22	4422
29	SCN	172	705	2585	1410	4700	24	4724
30	GS	339	675	2475	1350	4500	23	4523
31	CB	15	645	2365	1290	4300	22	4322
32	SCZ	90	630	2310	1260	4200	21	4221
	Total	1452						



## 9.9 Break-up of Provisional Transfer Price of Furnishing of Coaches - 2011-12

(Figs in thousands of Rs.)

S.No.	TYPE	No. of	Direct	Direct	Overheads	Total	Proforma	Total
		Shells	Labour	Stores		Mfg.	Charges	Cost
		turned out in	&			Cost		Proforma
		2011-12	Incentive					Charges
1	AC EMU B	120	1250	21250	2500	25000	376	25376
2	AC DC EMU B (GP 194)	15	2150	36550	4300	43000	466	43466
3	DEMU DPC HHP	28	1455	24735	2910	29100	397	29497
4	DEMU DPC HHP J&K	7	1455	24735	2910	29100	397	29497
5	METRO K M/C	5	2000	34000	4000	40000	451	40451
6	DEMU TC HHP (GEN)	53	330	2310	660	3300	268	3568
7	DEMU TC HHP (VEN)	30	330	2310	660	3300	268	3568
8	DEMU TC HHP J&K	23	330	2310	660	3300	268	3568
9	AC DC EMU C (GP 194)	15	510	3570	1020	5100	277	5377
10	AC DC EMU D (GP 194)	10	520	3640	1040	5200	277	5477
11	AC DC EMU D/HC (GP 194)	5	500	3500	1000	5000	276	5276
12	AC EMU C	154	270	1890	540	2700	265	2965
13	AC EMU D	86	280	1960	560	2800	265	3065
14	METRO K T/C	3	530	3710	1060	5300	278	5578
15	ACCW HYB	3	1680	6160	3360	11200	307	11507
16	SCN HYB	15	720	2640	1440	4800	275	5075
17	GS HYB	6	630	2310	1260	4200	272	4472
18	SLRD HYB	2	600	2200	1200	4000	271	4271
19	FACCW	21	1530	5610	3060	10200	302	10502
20	ACCW	100	1650	6050	3300	11000	306	11306
21	ACCN	10	1650	6050	3300	11000	306	11306
22	FAC	8	1650	6050	3300	11000	306	11306
23	SCZ AC	20	1500	5500	3000	10000	301	10301
24	SLRD	85	390	1300	910	2600	264	2864
25	SCN	180	510	1700	1190	3400	268	3668
26	GS	343	450	1500	1050	3000	266	3266
27	CB	15	585	1950	1365	3900	271	4171
28	SCZ	70	450	1500	1050	3000	266	3266
	Total	1432						

# 9.10 STATEMENT OF OUT-TURN DURING THE YEAR 2011-12 - SHELLS

(figures in thousands of Rs.)

Sl.No.	Type	No.of Shells	Estimated	Total	Approximate
		turned out in	Cost per	Estimated	Cost of
		2011- 12	Shell as per	Cost	Manufacture
		(Board RSP)	Final Grant	(Col.iii * iv)	
(i)	(ii)	(iii)	(iv)	(v)	(vi)
1	AC EMU B	120	5700	684000	738720
2	AC DC EMU B (GP 194)	12	5900	70800	76464
3	DEMU DPC HHP	28	5400	151200	163296
4	DEMU DPC HHP J&K	8	5800	46400	50112
5	DEMU DPC HHP IGBT	2	6600	13200	14256
6	METRO K M/C	14	4600	64400	69552
7	DEMU TC HHP (GEN)	53	4600	243800	251114
8	DEMU TC HHP (VEN)	30	4600	138000	142140
9	DEMU TC HHP J&K	24	4900	117600	121128
10	DEMU TC HHP (GEN) IGBT	4	4900	19600	20188
11	DEMU TC HHP (VEN) IGBT	2	4900	9800	10094
12	AC DC EMU C (GP 194)	3	5300	15900	16377
13	AC DC EMU D (GP 194)	10	5400	54000	55620
14	AC DC EMU D/HC (GP 194)	2	5200	10400	10712
15	AC EMU C	154	4600	708400	729652
16	AC EMU D	86	4800	412800	425184
17	METRO K T/C	4	4400	17600	18128
18	SCN HYB	1	5400	5400	5616
19	GS HYB	2	5000	10000	10400
20	SLRD HYB	2	4600	9200	9568
21	FACCW	25	5100	127500	132600
22	ACCW	105	5200	546000	567840
23	FAC	20	5000	100000	104000
24	SCZ AC	20	5100	102000	106080
25	SLRD	85	4400	374000	377740
26	SCN	172	4700	808400	816484
27	GS	339	4500	1525500	1540755
28	CB	15	4300	64500	65145
29	SCZ	90	4200	378000	381780
	Total	1432		6828400	7030745

**9.11 STATEMENT OF OUT-TURN DURING THE YEAR 2011-12-COACHES**  
**(FURNISHING COST)** (figures in thousands of Rs.)

Sl.No.	Type	No.of Shells	Estimated	Total	Approximate
		turned out in	Cost per	Estimated	Cost of
		2011-12	Shell as per	Cost	Manufacture
		(Board RSP)	Final Grant	(Col.iii * iv)	
(i)	(ii)	(iii)	(iv)	(v)	(vi)
1	AC EMU B	120	25000	3000000	3240000
2	AC DC EMU B (GP 194)	15	43000	645000	696600
3	DEMU DPC HHP	28	29100	814800	879984
4	DEMU DPC HHP J&K	7	29100	203700	219996
5	METRO K M/C	5	40000	200000	216000
6	DEMU TC HHP (GEN)	53	3300	174900	180147
7	DEMU TC HHP (VEN)	30	3300	99000	101970
8	DEMU TC HHP J&K	23	3300	75900	78177
9	AC DC EMU C (GP 194)	15	5100	76500	78795
10	AC DC EMU D (GP 194)	10	5200	52000	53560
11	AC DC EMU D/HC (GP 194)	5	5000	25000	25750
12	AC EMU C	154	2700	415800	428274
13	AC EMU D	86	2800	240800	248024
14	METRO K T/C	3	5300	15900	16377
15	ACCW HYB	3	11200	33600	34944
16	SCN HYB	15	4800	72000	72720
17	GS HYB	6	4200	25200	25452
18	SLRD HYB	2	4000	8000	8080
19	FACCW	21	10200	214200	222768
20	ACCW	100	11000	1100000	1144000
21	ACCN	10	11000	110000	114400
22	FAC	8	11000	88000	91520
23	SCZ AC	20	10000	200000	208000
24	SLRD	85	2600	221000	223210
25	SCN	180	3400	612000	618120
26	GS	343	3000	1029000	1039290
27	CB	15	3900	58500	59085
28	SCZ	70	3000	210000	212100
		1432		10020800	10537343

**9.12 Average Cost per Shell inclusive of Dividend, Share of Cost of Railway Board, DRA etc.**

(figures in thousands of Rs.)

Sl.No.	Type	Manufacturing	Dividend	Share of	Total
		Cost	***	Cost of	
		(Approx.)		Rly.Board	
1	AC EMU B	6156	0	31	6187
2	AC DC EMU B (GP 194)	6372	0	32	6404
3	DEMU DPC HHP	5832	0	29	5861
4	DEMU DPC HHP J&K	6264	0	31	6295
5	DEMU DPC HHP IGBT	7128	0	36	7164
6	METRO K M/C	4968	0	25	4993
7	DEMU TC HHP (GEN)	4738	0	24	4762
8	DEMU TC HHP (VEN)	4738	0	24	4762
9	DEMU TC HHP J&K	5047	0	25	5072
10	DEMU TC HHP (GEN) IGBT	5047	0	25	5072
11	DEMU TC HHP (VEN) IGBT	5047	0	25	5072
12	AC DC EMU C (GP 194)	5459	0	27	5486
13	AC DC EMU D (GP 194)	5562	0	28	5590
14	AC DC EMU D/HC (GP 194)	5356	0	27	5383
15	AC EMU C	4738	0	24	4762
16	AC EMU D	4944	0	25	4969
17	METRO K T/C	4532	0	23	4555
18	SCN HYB	5616	0	28	5644
19	GS HYB	5200	0	26	5226
20	SLRD HYB	4784	0	24	4808
21	FACCW	5304	0	27	5331
22	ACCW	5408	0	27	5435
23	FAC	5200	0	26	5226
24	SCZ AC	5304	0	27	5331
25	SLRD	4444	0	22	4466
26	SCN	4747	0	24	4771
27	GS	4545	0	23	4568
28	CB	4343	0	22	4365
29	SCZ	4242	0	21	4263

\*\*\* : The Dividend element is fully provided in the final product i.e. Coach instead of Shell & Coach separately.



**9.13 Average Furnishing Cost per coach inclusive of Dividend, Share of Cost of Railway Board, DRA etc.,**

(figures in thousands of Rs.)

Sl.No.	Type	Manufacturing Cost (Approx.)	Dividend ***	Share of Cost of Rly.Board	Total
1	AC EMU B	27000	251	135	27386
2	AC DC EMU B (GP 194)	46440	251	232	46923
3	DEMU DPC HHP	31428	251	157	31836
4	DEMU DPC HHP J&K	31428	251	157	31836
5	METRO K M/C	43200	251	216	43667
6	DEMU TC HHP (GEN)	3399	251	17	3667
7	DEMU TC HHP (VEN)	3399	251	17	3667
8	DEMU TC HHP J&K	3399	251	17	3667
9	AC DC EMU C (GP 194)	5253	251	26	5530
10	AC DC EMU D (GP 194)	5356	251	27	5634
11	AC DC EMU D/HC (GP 194)	5150	251	26	5427
12	AC EMU C	2781	251	14	3046
13	AC EMU D	2884	251	14	3149
14	METRO K T/C	5459	251	27	5737
15	ACCW HYB	11648	251	58	11957
16	SCN HYB	4848	251	24	5123
17	GS HYB	4242	251	21	4514
18	SLRD HYB	4040	251	20	4311
19	FACCW	10608	251	53	10912
20	ACCW	11440	251	57	11748
21	ACCN	11440	251	57	11748
22	FAC	11440	251	57	11748
23	SCZ AC	10400	251	52	10703
24	SLRD	2626	251	13	2890
25	SCN	3434	251	17	3702
26	GS	3030	251	15	3296
27	CB	3939	251	20	4210
28	SCZ	3030	251	15	3296

**9.14 Actual Cost of Shells manufactured from 1955-56 to 2010-11**

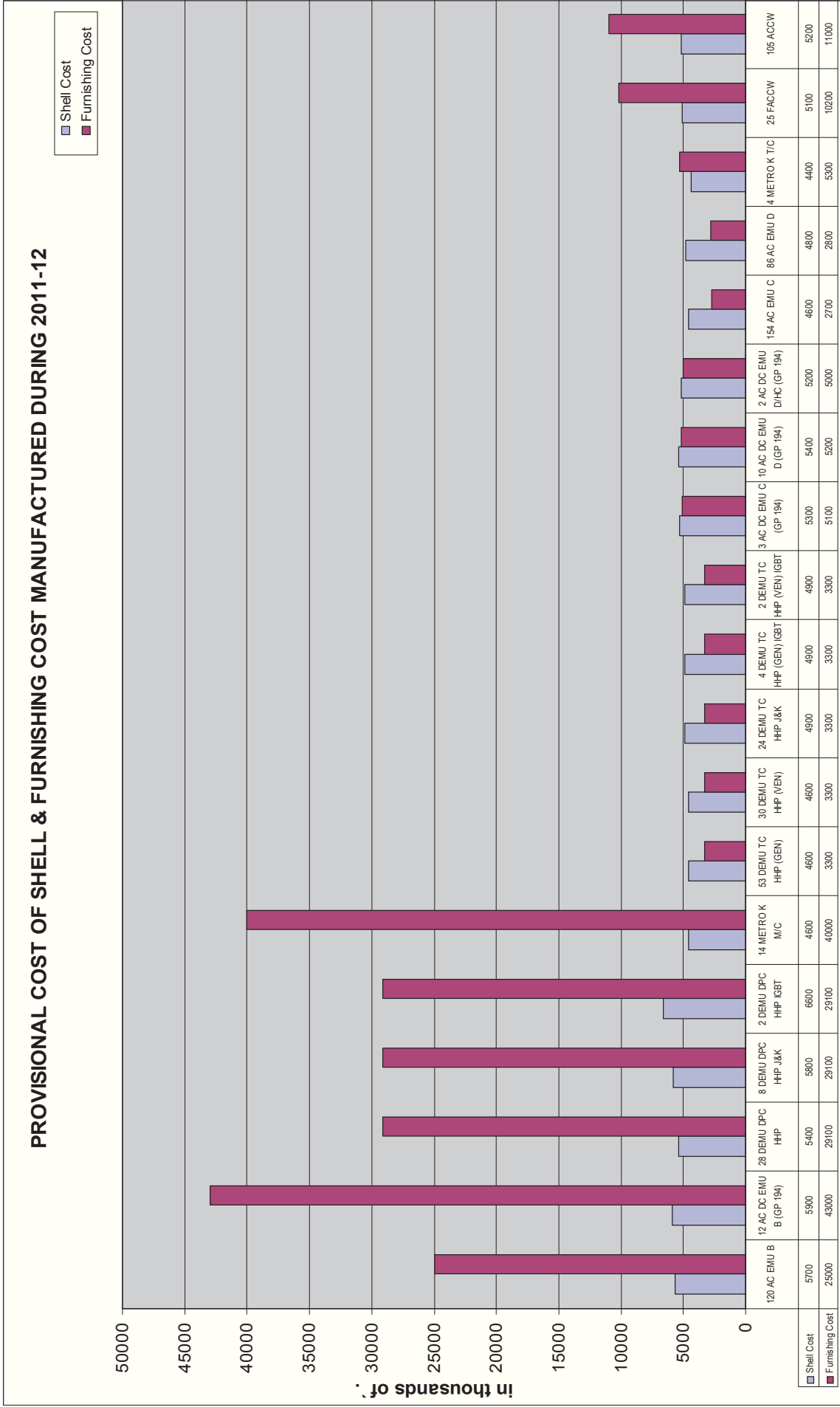
(figures in thousands of Rs.)

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			
1982-83	766	363762			
1983-84	786	408546			
1984-85	809	458247			

**9.15 Actual Furnishing Cost of Coaches manufactured from 1955-56 to 2010-11**

(figures in thousands of Rs.)

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			
1984-85	793	346346			



(value in thousands of rupees)



**INTEGRAL COACH FACTORY, CHENNAI - 38**  
**MANUFACTURING ACCOUNT FOR THE YEAR 2011-12**

DEBITS				CREDITS			
SL No	PARTICULARS	2010-11	2011-12	SL No	PARTICULARS	2010-11	2011-12
1	TO OPENING BALANCE a.) Work in Progress b.) Development Suspense	1128591519.32 -2507260.00	1287726088.32 -2507260.00	1	BY TRANSFER TO RAILWAYS a.) Supply of Coach Shells b.) Furnishing of Coaches c.) Adjustment - Cost Report d.) Metro - KOLKATA e.) Miscellaneous Jobs - Other Rls. f.) RDSO	733140000.00 1068240000.00 0.00 0.00 140298750.00 0.00	707348000.00 1002080000.00 241795000.00 146130000.00 261768118.00 13619762.00
2	TO LABOUR a.) Direct Labour - Workshops b.) Indirect Labour - Workshops c.) Salaries and Allowances of Admn and General Departments Outside the Workshops	1797920404.21 1619899468.23	1859090108.93 1719882288.86	2	BY CAPITAL STORES SUSPENSE a.) Manufactured Materials b.) Returned to Stores	1290771.00 596446365.00	1948937.00 883922340.68
3	TO STORES a.) Direct Stores b.) Indirect Stores c.) Freight and Incidental Charges	12825538301.85 338072637.49 224722255.00	14816880065.80 247488311.39 314767427.00	3	BY CAPITAL WORKS a.) Plant & Machinery b.) DRF Works	0.00 0.00	0.00 0.00
4	TO DIRECT CHARGES Erection by Contract	189210281.00	151462950.00	4	BY WORK DONE ON DEPOSIT ACCOUNT	389923947.00	1180122375.00
5	TO INDIRECT CHARGES a.) Contribution to DRF b.) Contribution to PF c.) Appropriation to Pension Fund	90300000.00 0.00 573998000.00	180000000.00 0.00 860997000.00	5	BY EXPORT ORDERS	66189180.00	851844469.93
6	TO OTHER CHARGES a.) Electricity Charges b.) Water Charges c.) New -Minor Works, Addition & Replacement d.) Miscellaneous Charges e.) Receipts on House Rent, Water and Electricity, Others	34113639.00 45107568.00 135034584.66 425270820.00 -52002270.00	46684561.00 45005087.00 94825956.70 574200887.00 -246225492.00	6	BY DEVELOPMENT SUSPENSE	0.00	0.00
				7	BY CLOSING BALANCE (A+B) A.) Work in Progress B.) Development Suspense Balance	1287726088.32 -2507260.00	1174187043.32 -2507260.00
	GRAND TOTAL	20493167841.32	23162280785.93		GRAND TOTAL	20493167841.32	23162280785.93

**Note:**

This Manufacturing Account does not include a sum of Rs. 28,27,45,223/- For 2011-12 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.

SSO/WMS                      SR.AFA/Shell      DY.FA&CAO                      FA & CAO                      GENERAL MANAGER

**BALANCE SHEET FOR 2011-2012**

LIABILITIES				ASSETS			
SI.No.	Particulars	As on 31st March 2011 Details	Amount	SI.No.	Particulars	As on 31st March 2011 Details	Amount
<b>1</b>	Total investment as in the Block Account Statement		6079440796		Fixed and Floating Assets as in the Block Account Statement		6079440796
<b>2</b>	<b>Sundry Creditors</b>						
<b>a.</b>	<b>Provident and Other Funds</b>						
<b>i.</b>	General Provident Fund			<b>2</b>	Cash in hand		680910
<b>ii.</b>	State Railway Provident Fund (Contributory)			<b>3</b>	<b>Sundry Debtors</b>		
				<b>a. i.</b>	F-Loans and Advances to Railway Employees-Festival Advance, Passage Advance and Permanent Advances	102530662	73083672
<b>iii.</b>	State Railway Provident Fund (Non - Contributory)	1236108371	1324858822	<b>ii.</b>	Other Departmental Advances	41470	0
<b>iv.</b>	Indian Railway Conference association employees Provident Fund.			<b>iii.</b>	Advances to Port and Customs Authorities.	387744	0
				<b>iv.</b>	Advances to Railwaymen's Consumer Co-operative Societies		
<b>v.</b>	Contributory (Transferred Railway Personnel) Provident Fund.			<b>v. a.</b>	Advance to the Family of the deceased who died in service	433014	484685
<b>vi.</b>	Non -Contributory (Transferred Railway Personnel) Provident Fund.			<b>b.</b>	Traffic Account-Other Railways		
				<b>c.</b>	Demands Recoverable		
<b>vii.</b>	Savings Provident Fund-Rlys.			<b>d.</b>	Miscellaneous Advance-Revenue		
<b>viii.</b>	Staff Benefit Fund	12765509	13829556	<b>e.</b>	Sundry Deposits with Central Government(vide item 2(b) per contra)	2124420977	2227813867
<b>ix.</b>	Miscellaneous Provident Fund (Contributory)			<b>4</b>	<b>INVESTMENTS</b>		
<b>x.</b>	Miscellaneous Provident Fund (Non-Contributory)		1248873880	<b>a.</b>	Indian Railways Conference Association Employees Provident		
							845473321
							919041678

LIABILITIES				ASSETS			
Sl.No.	Particulars	As on 31st March 2011 Details Amount	As on 31st March 2012 Details Amount	Sl.No.	Particulars	As on 31st March 2011 Details Amount	As on 31st March 2012 Details Amount
<b>b.</b>	<b>Miscellaneous Deposits</b>						
<b>i.</b>	Security Deposits of Subordinates	365783	444383		<b>b.</b> Staff Benefit Fund		
<b>ii.</b>	Security Deposits of Contractors and others	208370397	233191370	<b>5</b>	Savings Bank Account with Govt. (vide item 2(a) 3 & 4(i) per contra less item (4) above)	5481364275	6139573591
<b>iii.</b>	Contribution for work done for Private persons and Public bodies			<b>6</b>	Reserve Fund Investment Account ( vide item 4(ii) per contra		
<b>iv.</b>	Unpaid Wages	427048	342626	<b>7</b>	Accounts with States		
<b>v.</b>	Sums due to contractors				<b>a.</b> Account with Central (Civil)		
<b>vi.</b>	Net earnings of worked items			<b>8</b>	Account with the Government of Pakistan Railways.		
<b>vii.</b>	Private Companies			<b>9</b>	Account with the Government of Pakistan (Civil)		
<b>viii.</b>	Miscellaneous	1992919940	611365825				
<b>ix.</b>	Capital deposited by Branch line Companies.			<b>10</b>	Adjusting Account with Post and Telegraphs.		
<b>x.</b>	Trust Interest Account			<b>11</b>	Adjustment account with Defence		
<b>xi.</b>	Account with Reserve Bank			<b>12</b>	Account with Government of Bangladesh		
<b>xii.</b>	Remittance into Bank	-184146613	-54476689	<b>13</b>	Balance in Transfer		
<b>xiii.</b>	Cheques and Bills	107358268	55533844	<b>14</b>	Loss		
<b>xiv.</b>	Other Deposits Companies outstanding liabilities of D.H. Railways.						
<b>xv.</b>	PAO Suspense/Railways	-1234959	-1333279				
<b>xvi.</b>	A.G. Suspense Account						
<b>xvii.</b>	Railway Employee Insurance Scheme.						

LIABILITIES						ASSETS					
Sl.No.	Particulars	As on 31st March 2011 Details	Amount	As on 31st March 2012 Details	Amount	Sl.No.	Particulars	As on 31st March 2011 Details	Amount	As on 31st March 2012 Details	Amount
xviii.	Group Insurance Scheme										
xix.	Election Commission - Assam Election.										
xx.	Repayment of Additional DA Suspend Account.										
xxi.	Repayment of Additional Wages Suspend Account.										
xxii.	Fine Forfeiture Account										
xxiii.	Payment on account of SRPF/SPF in advance of Cash Credits to be Recovered from Pakistan.										
xxiv.	Payment on behalf of Central Claims Organisation - Pension and Provident Fund.										
xxv.	Decreetal Court Deposits										
xxvi.	Other Transactions										
xxvii.	Unclaimed Provident Fund	361113	2124420977	405241	845473321						
c.	Demands Payable	0	0	0	0						
3 i.	Depreciation Reserve Fund	-1429839795		-1558824858							
ii.	Railway Development Fund	0		0							
iii.	Railway Pension Fund	5667238331		6364618212 *							
iv.	Accident Compensation Safety and Passenger Amenities Fund	0		0							
v.	Railway Safety Fund	0		0							
vi.	Special Railway Safety Fund	-4908141	4232490395	-4908141	4800885213						
4	Revenue Reserve Fund										
i.	Cash Balance										
ii.	Investment										
5 i.	Balance due to Central Government for Loans and Advances to Railway Employees etc (vide item 3(a) (i) per contra.	102530662		73083672							

LIABILITIES				ASSETS			
Sl.No.	Particulars	As on 31st March 2011	As on 31st March 2012	Particulars	As on 31st March 2011	As on 31st March 2012	
		Details	Amount		Details	Amount	
ii.	Other Advances(vide item 3(a)(ii) per contra.)	41470	0				
iii.	Advances to Port and Customs authorities(vide item 3(a)(iii) per contra)	387744	0				
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)	433014	484685				
6	Balance in transfer		103392890			73568357	
7	Balance of amount in account with Government		680910			806410	
8	Profit						
	<b>TOTAL</b>		<b>13789299848</b>	<b>TOTAL</b>		<b>13444287609</b>	<b>13444287609</b>

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".

  
 (MEERA NAGESHWARAN)  
 FINANCIAL ADVISER AND  
 CHIEF ACCOUNTS OFFICER.

  
 (ABHAY K. KHANNA)  
 GENERAL MANAGER/ICF



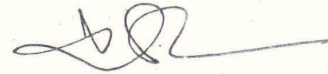
**CERTIFICATE OF THE PRINCIPAL DIRECTOR OF AUDIT ON THE  
BALANCE SHEET OF INTEGRAL COACH FACTORY: CHENNAI.**

**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 31<sup>st</sup> March 2012.



(K. S. SUBRAMANIAN)

प्रधान निदेशक लेखा परीक्षा

PRINCIPAL DIRECTOR OF AUDIT

## **ELECTRICAL PRODUCTION & MAINTENANCE**

### **10.1 HIGHLIGHTS IN PRODUCTION**

The following coaches were turned out from Furnishing Division /ICF during the production year 2011-12.

- 1) The out-turn during the year 2011-12 is 1511 coaches consisting of 36 types of builds.
- 2) 5 Rakes (9 car rake) for MRVC with 3 phase IGBT propulsion system have been dispatched to Central and Western Railways. Out of which, one 9 car has been dispatched with Siemens bogie to WR.
- 3) 36 rakes (9 car rakes) of AC EMU have been dispatched to various railways.
- 4) 16.5 rakes of DEMU coaches have been dispatched to various railways.
- 5) 10 Rakes of DEMU coaches (8 car rake ) have been manufactured and dispatched to Sri Lanka.
- 6) 3 Rakes of DEMU coaches are dispatched to J&K.
- 7) 5 Rakes of Kolkata Metro coaches have been dispatched to Metro Railway.
- 8) 140 Air conditioned coaches of 7 types have been dispatched which includes LHB ACCW & Emission test car.

### **10.2. IMPROVEMENTS IN NON-AC COACHES:-**

1. The following statement illustrates various equipment provided in the conventional coaches from April' 2011 to March' 2012.

<b>Months/ Equipments</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug</b>	<b>Sept</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>March</b>	<b>Total coaches</b>
BLDC fans	-	05	70	37	29	15	08	02	04	21	28	66	285
Emergency Lamps	55	77	70	42	49	48	65	47	61	31	51	135	731
100 VA Mobile chargers	04	29	25	16	10	17	17	03	27	11	12	11	182
VRLA Batteries	20	44	-	01	01	-	02	-	01	04	43	94	210
AC fans	48	09	-	07	15	19	20	23	21	10	21	64	257

2. In the process of standardization, **569** coaches are provided with 2 x 11 Watt CFL type lavatory fittings in toilets of conventional coaches.
3. **214** conventional GS & SCN coaches were provided with 1 x 11 W CFL type fitting in gang way & **35** SLR coaches were provided with 1 x 11 W CFL type fitting in Emergency equipment room.
4. **119** conventional coaches were provided with emergency light testing push button.
5. **5** SLR coaches provided with LED type tail light and dispatched.
6. **15** LHBSCN, 6 LHBGS, 2LHBSLR coaches were manufactured and dispatched to various Railways.
7. **11** conventional GS coaches (vide ICF/Fur No. GS 4996, 4999, 5000, 5002, 5003, 5007, 5008, 5009, 5015, 5016 & 5026) were wired and provided with LHB type control panel and dispatched.

### **10.3 AC Coaches**

1. **10** AC/3 Tier Coaches with garib rath design RMPUs provided and dispatched.
2. Production belt process revised as flow from 8<sup>th</sup> line of Shop-30 to 7<sup>th</sup> line of shop 36 which has reduced the shunting and saved the production time duly creating necessary and required facilities in 7<sup>th</sup> line of shop-36 during June 11 onwards.
3. AVMs (RR 200) for RMPUs in all six LHB AC hybrid coaches suitably sourced to suit to the well design and in one coach provided and dispatched.
4. **40** ACCW coaches were provided with Emergency Feed Supply (EFS) system, to get the supply from adjacent coach in emergency like failure of batteries.
5. **77** ACCW & **2** FACCW coaches provided with LED based night light fittings & dispatched.
6. **3** ACCW coaches were provided with RMPUs having eco friendly refrigerant gas R-407 C.
7. Emission test car for RDSO was manufactured and dispatched to Northern Railway vide no. NR 8025.
8. **27** AC and **67** Conventional coaches were provided with LED based side light and dispatched.

### **10.4 Self Propelled Coaches**

- 1) Rakes of AC EMUs dispatched to Central Railway have been modified according to interior layout requirement.
- 2) New Design of Roof Mounted Air Handling unit provided in 3 AC DC EMU coaches (Rake No.128) on a trial measure.

- 3) Provision of LED tail light has commenced in AC EMU Motor coaches on regular basis.
- 4) Due to introduction of Bio-Toilet in J&K DEMU, underframe wiring work and modification in the power IV coupler has been carried out.
- 5) Heater for under slung water tank has been provided in J&K DEMU coaches.
- 6) DC-DC converter (110V/12V dc) has been provided in J&K DEMU /DPC coaches for the operation of Water jet pump which has been provided for cleaning of lookout glass.
- 7) Based on feedback received while commissioning of Kolkata Metro rakes at Metro Railway, the underframe cable layout has been decongested by duly providing additional tray arrangement. This would also help free ventilation in underframe area for the equipments as well as cables. This arrangement has been implemented from 7<sup>th</sup> rake of Metro coaches.
- 8) Presently in AC EMU motor coaches, the Main Low Tension panel (MLT) has been provided with Tosha type terminal blocks in which cables are getting terminated with hardware. This arrangement has been modified with provision of wago type terminal blocks in Motor Coach Nos. M-313 & M-319 which helps in reliable termination of cables as well as better wiring layout.
- 9) Contactor box with controls have been provided in J&K DEMU DPC and J&K DEMU TC-II coach to facilitate extension of power supply of 320 KVA DA set while coaches are in 12 car formation.
- 10) All Kolkata Metro coaches dispatched were provided with RMPUs which are working with eco-friendly refrigerant R-407C.

## **10.5 DESIGNS & DEVELOPMENT OF NEW ITEMS**



a. Pre-fabricated and pre-wired driver's desk designs/drawings with nose cone design to save man hours, improve quality, avoid damages due to welding activity.

b) Electrical wiper and automatic switching ON of flasher light.



c) Modular transformer :-

Drawings for floor, underframe & endwall issued for AC EMU with the new type of transformer

- d) **LED lights introduced** in place of incandescent light for night light, berth reading light, passenger alarm indication light in all types of AC coaches.



- e) Introduced polyamide conduits and fittings in place of Reinforced VH type.
- f) Rotary switch box for conventional coaches by modified incorporating copper bus bar arrangement of conduit & trays on U/F for AC/EMU/M revised duly adding conduit arrangement for Modular transformer.
- g) Toilet occupied status indication box circuit and design modified to improve visibility and reduce wiring.
- h) Drawings for Jn.boxes(3types) for AC coaches modified incorporating 'WAGO' terminals, 13 nos UL closed by using standardized items
- i) Arrangement of U/F wiring for all types SGAC coaches revised due to standardization of floor bearer hence cost effective
- j) Design of polycarbonate FL fitting in AC coaches standardized. All types of AC coaches polycarbonate FL fitting has been standardized to avoid using different fitting in different types of AC coaches.

## **10.6 SAFETY IMPROVEMENT:**

To improve safety in DEMU/J&K, positive, negative segregation was done by issuing new drawings for Roof harness chart, Roof scheme and wiring diagram, TLTB wiring, Schematic & wiring diagram for feeder extension (8 car to 12 car) and Contactor box for feeder extension.

## **10.7 ISSUE OF DRAWINGS**

- a) *Production drawings for* DEMU/TC3/J&K, Emission test car, First AC with 2 RMPUs, DMU/DPC/SS, TC/SS & TC/V/SS (1600 HP), LHB – AC Chair Car, Executive Chair Car & 2 T AC, ARTV, ARMV, SV/DPC issued.
- b) Firm drawings of Medha for DEMU 3 phase and M/s SAN Engg. for ARTV, ARMV, SV/DPC approved.
- c) Material Schedule for Emission test car, First AC with 2 RMPUs, DMU/DPC/SS, TC/SS & TC/V/SS (1600 HP), LHB – AC Chair Car, Executive Chair Car & 2 T AC, ARTV, ARMV, SV/DPC issued.



## **10.8 SPECIFICATIONS:**

- a. Specification for Fabricated & Pre- wired drivers desk for AC/EMU Motor coaches with  
Nose cone design issued No.ICF/ELEC-124.
- b. Specification for Electrical wiring in coaches No.ICF/ELEC-123,
- c. Specification for Chimey No.ICF/ELEC-898 revised,
- d. Emergency exit light drawing included in spec.No.ICF/EELC- 934,Rev.1,CS.1 for introduction in ACCC
- e. Amendment to Spec.No. RDSO/PE/SPEC/TL/0011-2000 Rev.01 for Electronic lamp Ballast issued to reduce operating voltage and reduce size and weight.

## **10.9 CAPACITY CUM CAPABILITY ASSESSMENT**

Capacity assessment carried out for the following firms :

- |   |                                      |
|---|--------------------------------------|
| a) Multiline, Chennai                                     | - MLT Panel for AC EMU               |
| b) Agastya Technology and Transmission Pvt. Ltd., Chennai | - LED Based Light fittings           |
| c) Lucas TVS, Chennai                                     | - Electrically Operated Wiper        |
| d) Kamlesh Industries, Mumbai                             | - Compact Fluorescent Light fittings |
| e) Pep Electronics, Mumbai                                | - Compact Fluorescent Light fittings |
| f) Ambigo Electro Tech. Chennai. Chennai.                 | - Power panel for AC coaches         |
| f) Lambda Elcot Ltd, Chennai                              | - Additional Smoothing Reactor       |
| h) S.International, Mumbai                                | - Inter Vehicular Coupler for AC EMU |
| i) Ace Engineering & Chemicals Pvt Ltd, Indore            | - FRP Trays for Battery Box          |

## **10.10 PROTOTYPE TESTING**

Prototype clearance accorded for the following firms/items :

- |   |  |
|---|--|
| a) Maave Electronics Pvt Ltd, Hyderabad                   | - Reservation Chart Light<br>Night light cum Berth Indication Light<br>LED based Passenger Alarm Indication Light  |
| b) Altos Electronics Pvt Ltd, Pune                        | - LED based Passenger Alarm Indication Light, LED based Reservation Chart Light  |
| c) Hy Tech Power Systems, Hyderabad                       | - Night Light cum Berth Indication Light<br>LED based Berth Reading Light  |
| d) Shah & Sahib, Delhi                                    | - Amalgamated Transformer Rectifier Unit   |
| e) Agastya Technology and Transmission Pvt. Ltd., Chennai | - Reservation chart light<br>Night Light cum berth indication light<br>LED based Passenger Alarm Indication Light<br>LED based Toilet Occupied Light Fitting |
| f) Lambda Elcot Ltd, Chennai                              | - Amalgamated Transformer Rectifier unit   |
| g) Intra Electronics, Pune                                | - 36W Electronic Lamp Ballast  |
| h) Allied Radiator, Kolkata                               | - Transformer Oil Cooler   |
| i) Flowwell Engineers, Bangalore                          | - Oil pump with motor  |
| j) Kontact Consortium India P Ltd, Chennai                | - MLT Panel with Wago terminal   |
| k) Ramyaa Electro Gear Pvt Ltd, Chennai                   | - MLT panel with Wago terminal   |

### **10.11        REVALIDATION**

Revalidation carried out for the following firms:

- |  |   |  |
|--|---|--|
| a) Ramyaa Electro Gear Pvt Ltd, Chennai      | - Additional Smoothing Reactor, 500 VA                      | Constant Voltage Transformer, Battery charger, 2 KVA Transformer |
| b) Kontact Consortium India (P) Ltd, Chennai | - Prewired Power Panel for SG Type AC Coach                 |  |
| c) Designs & Prototype, Chennai              | - Additional Smoothing Reactor                              |  |
| d) Blue Star Exports, Chennai                | - Amalgamated Transformer Rectifier Unit, 2 KVA transformer |  |
| e) Raman Sinhas Electricals, Chennai         | - Railway Carriage Fans                                     |  |
| f) SPJ Industries Pvt Ltd                    | - Railway Carriage Fans                                     |  |
| g) Saria Industries Corporation, Howrah      | - Railway Carriage Fans                                     |  |
| h) Hind Rectifiers Ltd, Mumbai               | - Main Silicon Rectifier for AC EMU                         |  |
| i) Elgi Electrics, Coimbatore                | - All 110v dc Motors for under slung AC coaches             |  |
| j) K.D.Chopra & Co, Kolkata                  | - Railway Carriage Fans                                     |  |

### **10.12        INCLUSION OF VENDORS TO PART – II**

Following firms have been included in electrical Vendor Directory in Part II.

- a) M/s. Sri Bhagya Fibre Glass Products, Chennai has been included as a Developmental Source (Part-II) for the supply of FRP TRAY FOR BATTERY BOXES used in TL & AC Coaches.
- b) SIEMENS make and SCHNEIDER make have been included as a Developmental Source (Part-II) for the supply of AC/DC MCB as per IS: 8828-1996, RDSO Spec no: E-12/1/04Amend.1.
- c) M/s. CSM Engineers, Faridabad has been included as a Developmental Source (Part-II) for the supply of EMERGENCY FEED TERMINAL (FRP-SMC) used in TL & AC Coaches.
- d) M/s. Sri Bhagya Fibre Glass Products, Chennai has been included as a Developmental Source (Part-II) for the supply of FRP TRAY FOR BATTERY BOXES used in TL & AC Coaches.
- e) M/s. CSM Engineers, Faridabad has been included as a Developmental Source (Part-II) for the supply of FRP SMC MOULDED FUSE DISTRIBUTION BOX used in TL Coaches.
- f) M/s. Integ Electronics, New Delhi has been included as a Developmental Source (Part-II) for the supply of PREWIRED FL FITTING WITH LAMP BALLAST.

### **10.13.UPGRADATION OF VENDORS TO PART – I**

Following firms have been upgraded from Part II to Part I in Electrical Vendor directory

- a) M/s.CG-PPI ADHESIVE PRODUCTS (CG-PPI BRAND) has been upgraded as a regular source Part – I for the supply of FRLT Cotton Insulation Tape (Spec no: ICF/ELEC-921, C.S. No:1, Rev. 0.
- b) M/s. RAMYAA ELECTRO GEAR PRIVATE LIMITED has been upgraded as a regular source Part – I for the supply of Additional Smoothing Reactor (Spec no: ICF/ELEC-068, C.S. No:5 & ICF/SK 9-0-942 and ICF/SK 9-0-963.
- c) M/s. RAMYAA ELECTRO GEAR PRIVATE LIMITED has been upgraded as a regular source Part – I for the supply of Drivers Desk Panel as per Drg No: EMU/M2-7-5-502 Col III & IV.

### **10.14 MATERIAL ASSISTANCE TO RAILWAYS**

The total value of materials spared to other Railways during current year **2011-12** is **Rs. 68,25,179/-**

### **10.15 POWER SUPPLY AND MAINTENANCE OF MACHINERY AND PLANT**

- a) Distribution and maintenance of power supply to all shops, Service buildings, Colonies, ICF hospitals, D&D Building, GM's Bungalow, residential quarters and guest house in Perambur area during the year 2011-12 has generally been satisfactory.
- b) The energy consumption during 2011-12 is 2,48,51,010 units compared to 2,51,27,161 units for the year 2010-11.
- c) The Energy consumption/ ECU for the year 2011-12 is 9074 units compared to 9356 units for the 2010-11.
- d) Maintenance of machines, cranes, traversers, compressors, welding sets, lighting and ventilation arrangements, Pump house, Street lights, centralized air condition plants, air conditioners, water coolers, vehicles, repairs of motors & pumps etc. has been generally satisfactory. The machinery and plant breakdown was kept at 0.72% during the year 2011-12 as compared to 0.86% during the year 2010-11.
- e) Maintenance of telephone exchange, Railnet and Internet connectivity has generally been satisfactory.

## **10.16 IMPROVEMENTS IN FACTORY, COLONIES AND SERVICE BUILDINGS**

Works Completed for the improvement of facilities during the year 2011-2012.

- 1) Old HT OCB Panels replaced by new HT VCB Panels in Compressor Room & Shop-39 in Furnishing Division.
- 2) Old LT Panels replaced by new LT Panels in CWE/Fur Admin. Office, Compressor Room, MRS & Shop-32.
- 3) New HT XLPE cable laid between shop-33 to shop-80 as a part of Strengthening of HT ring main in Furnishing Division.
- 4) 4 nos. 750 volt DC distribution boards installed in MRVC shed for testing of Kolkatta Metro Coaches.
- 5) 50 nos. 2x14 watts CFL lights provided in the Toilets and Corridors as a Energy conservation measure.
- 6) Re-wiring completed in the West wing of 1<sup>st</sup> floor in CWE/F's office buildings.
- 7) 10 nos. of Exhaust fans with Energy saver fitting in the Toilets as a Energy Conservation measure.
- 8) Top & bottom cover for 20 nos. platform trucks provided for better mechanical protection and to have aesthetic look.
- 9) Replacement of over aged LT Underground cable in North Colony.
- 10) Replacement of Over aged street Light fittings with energy saver fittings in all Colonies.
- 11) Electrification of 3 Nos. of New Type V Quarters in Perambur.
- 12) Rewiring of 100 units of Type I Qtrs in South Colony.
- 13) Provided 3 Nos. Automatic Power factor improvement panels with Harmonic filter in the colony Sub station.
- 14) Strengthening of incoming supply in residential quarters -Phase I-100 Blocks completed.
- 15) Over aged Main Distribution Box replaced in all colonies.
- 16) Over aged over head Lines replaced in South & East colony.
- 17) Electrification of Reconstructed Qtrs in West Colony & North Colony-56 Nos.
- 18) Over aged Bed Cum passenger Lift in ICF Hospital replaced.

### **WORKS IN PROGRESS**

- 1) Rewiring of 48 units of Type IV Qtrs in East & West Colony.
- 2) Modification of Electrical Wiring in Integral Club.
- 3) Replacement of over aged transformer & LT Distribution panel in SS10.
- 4) Rewiring of Type III Qtrs in South colony Phase I – 40 units.
- 5) Rewiring of Type III Qtrs in East and West colony Phase I – 80 units
- 6) Replacement of IC lamps with Energy Saver CFLs in Colony
- 7) Replacement of 1500 Nos. overaged ceiling Fans in ICF colony & Service Building.
- 8) Replacement of over aged Window ACs 48 nos.in ICF Hospital.
- 9) New separate TNEB, HT supply for ICF hospital and ICF colonies.
- 10) Rewiring of 400 Nos. of Type II quarters in all colonies.
- 11) Replacement of over aged street Light post in all ICF colonies.

## **WORK UNDER PLANNING.**

- 1) Strengthening of Hospital Power supply to cope up with increasing loads of ICF Hospital.
- 2) Replacement of Overaged HT OCB panels in SS 11A.
- 3) Replacement of Overaged Under ground cable at officers flat at Perambur.
- 4) Rewiring of Type II qtrs in West colony phase II.
- 5) Rewiring of Type II qtrs in North colony phase II.
- 6) Replacement of Overaged Street Light post in all colonies.
- 7) Strengthening of incoming supply in residential quarters - Phase II.
- 8) Replacement of Overaged Energy Meters in ICF quarters.

## **10.17 CONSTRUCTION WORK**

Execution of works awarded to under works programme and other new projects has been satisfactory. During the year 2011-12 an amount of Rs.7.23 Crores have been utilized out of budgetary requirements of Rs.8.87 Crores towards electrical construction activities under various plan heads

## **10.18 WIND MILL PROJECT**

The total generation from the wind mill during the year 2011-12 is 18.64 million units and the actual consumption is 24.85million units.The generation form the wind mill has resulted in a saving of Rs.7.10 Crores. CDM application to UNFCC for these wind mills has been processed which will further fetch revenue to ICF.



**CIVIL ENGINEERING****[A] BUDGET ALLOTMENT FOR THE YEAR 2011 - 12**

Detail	Works in Progress [WIP]	New works [NW] sanctioned	WIP + NW
	<i>(figure in thousands of rupees)</i>		
Budget allotment	24,16,98	3,19,72	27,36,70
Revised Estimate	15,02,13	70,05	15,72,18
Final Modification Projection	16,71,06	5,94	16,77,00
Expenditure	14,20,06	62	14,20,68

**[B] ACHIEVEMENTS**

**In the year of 2011-12, works related to 1500 project have been completed. The major projects / works completed during the year are given below.**

- Augmentation of capacity of manufacturing of 1500 coaches
- Widening of road and providing parking lot along the road leading from TNEB to ICF UCO bank with pavement
- Reconstruction of laboratory building at Furnishing division
- Replacement of sewage pipe line in East and West colonies- Phase-I
- Reconstruction of type II quarters 14 units in lieu of Type I quarters block Nos. 155, 157/1-6 in West colony and Type II Block No. 272 (4 units in North colony)
- Provision of separate trade Effluent drainage system from all machines to the main collection tank of common ETP at Shell Division. Phase II

**(B - I) Modernisation and Expansion of ICF manufacturing technologically upgraded coaches with increased production capacity from 1500 to 1700 coaches per year.**

The above project was sanctioned during 2010-11 at a total revised cost of **Rs.252.04 crores**. As per the Board's directions, out of Rs.252.04 crores of the estimated cost of the project, COFMOW would execute Civil, Mechanical & Electrical portions of works amounting to **Rs.141.91 crores** as a turn key project and the **Civil Engineering Department of ICF is to execute the balance Civil works. The details of works to be executed by COFMOW & ICF are detailed below.**

Sl. No	Name of the 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.	73,39 (civil portion - 21,54)	Agency has been fixed & the work is 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.	53,01 (civil portion - 13,39)	Agency has been fixed & the work is in progress
3	Construction of shed for garnet blasting including flooring and laying of BG track etc., for modernization and expansion of ICF, Chennai from 1500 coaches to 1700 coaches	15,51 (civil portion - 2,45)	Tender has been floated

**(i) Works to be executed by COFMOW:**

**(ii) Civil works to be executed by ICF**

Sl. No	Name of the work	Cost (fig. Rs. in lakhs)	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	<b>14,04</b>	Agency has been fixed and the foundation works are in progress. 338 nos of piles out of 342 nos have been completed. 38 nos of pile caps out of 66 nos have been completed. Further works are in progress.
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 & Re-construction of 2 nos of Nissan shed inside furnishing division & laying of two tracks with inspection pits, surface drain along with fiat bogie shed for Modernization and expansion of Integral Coach Factory, Chennai from 1500 to 1700 Coaches.	<b>6,05</b>	Agency has been fixed and the work is in progress.
3	Construction of compound wall with main entrance gate in connection with modernisation and extension of ICF from 1500 to 1700 coaches	<b>1,61</b>	Tender has been floated.

**[C]** Repairs and Maintenance works inside the Shell and Furnishing factory premises, in staff colonies (North, East, West and South) and Officers' quarters at Perambur, Administration, Welfare and Service Buildings are undertaken through seven zonal contracts for an amount of Rs.6.25 crores. Besides that, important works undertaken under Repairs and Maintenance are;

1. Repairs to leaky roof of staff quarters - 7,000 m<sup>2</sup>
2. Repairs to the roads at colonies - 2,250 m<sup>2</sup>

**[D]** New works sanctioned in the Works programme 2011-12 are progressing as per schedule.

To improve the workmanship and working space, additional facilities are provided in Shell and Furnishing Division. The works completed during the year 2011-12 and works in progress are furnished below.

### **SHELL DIVISION**

#### **Works completed**

SI No	Description of Work – Works completed	Amount (Rs. in lakhs)
1	High level walking platform for the maintenance of EOT crane in all sheds	45.68
2	Provision of service building out side K shed	48.58
3	Provision of concrete floor at Northern side of A & B shed in Shell division	33.96
4	Reconstruction of MW Store room near J shed office to release space under crange in 2 <sup>nd</sup> Bay of J shed Shell Division	25.27
5	Replacement of damaged RCC slabs with CI gratings over storm water drains in Shell Factory (Phase-II)	29.47
6	Replacement of damaged AC Sheet louvers and Gable ends with pre-coated metal colour sheets in E,F & C shops in Shell div (3500 m2)	31.03
7	Replacement of damaged road with heavy duty flooring inside Shell factory	32.53
8	Provision of RO plant of 2000 litres/hr for CMT lab, G & H shed, RT shop, J shop inside Shell factory	30.00
9	Perambur (shell factory) - Separate pipe line system for fire hydrants with booster pump arrangements (Phase-I).	56.17
10	Laying separate pipe line system for fire hydrants with booster pump arrangements inside Shell Factory (Phase II)	41.62
11	Provision of separate trade Effluent drainage system from all machines to the main collection tank of common ETP at Shell Division. Phase II	84.88

#### **Works in progress**

SI No	Description of Work – Works in progress	Amount (Rs. in lakhs)
1	Modernisation 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
2	Replacement of AC sheet with non-asbestos sheets for spring shop and D shop in Shell division	34.20

### **FURNISHING DIVISION**

#### **Works completed**

SI No	Description of Work – Works completed	Amount (Rs. in lakhs)
1	Reconstruction of laboratory building at Furnishing division	71.00
2	Provision of peripheral road all along the compound wall of Furnishing Division.	72.02
3	Replacement of corroded barbed wire/Y angle fencing on the compound wall of Furnishing Division	33.61
4	Repairs to damaged roads at various places inside Furnishing division	24.15
5	Construction of waste water treatment plant for New Workers canteen and Staff Canteen in Fur Division	28.52

#### **Works in progress**

SI No	Description of Work – Works in progress	Amount (Rs. in lakhs)
1	Replacement of fire hydrant lines at various locations in Furnishing division	28.72

### **STAFF AMENITIES**

#### **Works completed**

SI No	Description of Work – Works completed	Amount (Rs. in lakhs)
1	Replacement of sewage pipe line in East and West colonies- Phase-I	82.32

#### **Works in progress**

SI No	Description of Work – Works in progress	Amount (Rs. in lakhs)
1	Improvement to main storm water drain arrangements in the colonies	48.54
2	Development of park by providing compound wall, landscaping, Play equipments, fountain etc. at South colony	54.91
3	Replacement of existing steel tank by RCC overhead tank with GLR for officers quarters at Perambur	22.32
4	Replacement of dilapidated roof at Railway Club	34.89
5	Providing paver block, Landscaping and face lift for ICF hospital	25.00

### **STAFF QUARTERS**

#### **Works completed**

SI No	Description of Work – Works completed	Amount (Rs. in lakhs)
1	Reconstruction of type II quarters 14 units in lieu of Type I quarters block Nos. 155, 157/1-6 in West colony and Type II Block No. 272 (4 units in North colony)	196.74

#### **Works in progress**

SI No	Description of Work – Works in progress	Amount (Rs. in lakhs)
1	Construction of 6 suites (Rest house) for Group B & Sr.Scale officer at Perambur	39.30

Population projections indicate that 75% of the world's population could reside in coastal areas.

## HUMAN RESOURCE DEVELOPMENT

### 12.1 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. Almost all 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 2011-2012 as a part of the computerization work in Personnel Department of ICF.

- Software for issue of orders for re-fixation of pay due to grant of additional increment during February to June 2006
- Issue of Pension Payment Order
- PF interest calculator
- Renewal of ID cards
- On line grievance redressal system
- Monitoring of dispersal of settlement benefits of ONR (Other Than Normal Retirement) cases
- System improvement for ERP software implementation
- Issue of Last Pay certificate
- Court Cases Monitoring System
- Pensioners verification system

### 12.2 MARCH TOWARDS RIGHT-SIZING AND COST EFFECTIVE MANPOWER

As on 31.03.2011		Category	As on 31.03.2012	
Sanction	Operated		Sanction	Operated
180	159	Group A & B	175	163
13892	12067	Group C & D	13919	11771
14072	12226	Total	14094	11934

### 12.3 DETAILS OF WORKCHARGED POSTS IN GAZETTED CADRE AS ON 31/03/2012:

Department	HAG	SAG	JAG	SS	Gr.B/ JS	Total
Administration	0	0	0	0	0	0
Accounts (including Data centre)	1	0	1	6	0	8
Electrical	0	1	2	2	2	7
Engineering	0	0	1	1	0	2
Mechanical (including Lab Orgn)	0	2	6	8	1	17
Stores	1	0	0	4	0	5
Personnel	0	0	0	0	0	0
Medical	0	0	0	0	2	2
Total	2	3	10	21	5	41



#### **12.4 OPTIMUM UTILIZATION OF MANPOWER:**

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

#### **12.5 ADHERNCE TO TARGETS FOR MANPOWER INTAKE:**

The number of non-gazetted staff recruited through various sources by ICF administration is as under for the year 2011-12:

Category	2011-12
	No. of staff
Compassionate Grounds	44
Direct Recruitment ( RRB, RRC)	189
Direct Recruitment ( other than RRB/RRC- sports & substitutes)	18
TOTAL	251

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

#### **12.6 ENGAGEMENT OF ACT APPRENTICES**

As a statutory obligation under the Apprentices Act, 1961, all production units of Indian Railways are to engage and train apprentices in the designated trades of skilled artisans. During the year 2011-2012, 515 candidates were engaged to undergo Apprenticeship under the Apprentice Act, 1961 in various designated trades. 4 graduate apprentices and 6 Technician apprentices were engaged under the Apprentice Amendment Act 1973.

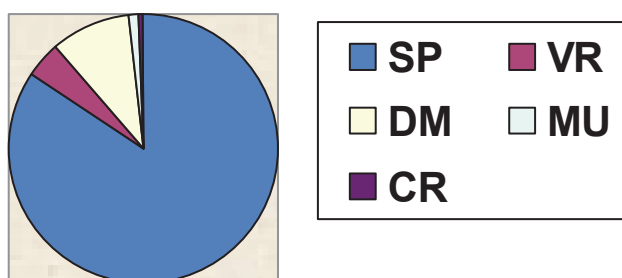
#### **12.7 SETTLEMENT ON RETIREMENT AND OTHER CASES**

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	2011-2012	
	Total	Settled
Superannuation	405	405
Voluntary retirement	23	20
Compulsory retirement	06	02
Medically unfit cases	07	06
Demise	65	46
Total	506	479

\* All superannuation cases were settled

## Settlement on Retirement 2011-2012



### 12.8 QUARTERS POSITION

Category	As on 31.03.2012		
	Strength	Occupied	Percentage
Group A & B	163	70	42.94
Group C & D	11751	2676	22.77
Total	11934	2750	23.04

### 12.9 WELFARE OF EMPLOYEES BELONGING TO SC/ST/OBC COMMUNITY

**12.9.1** 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	-

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

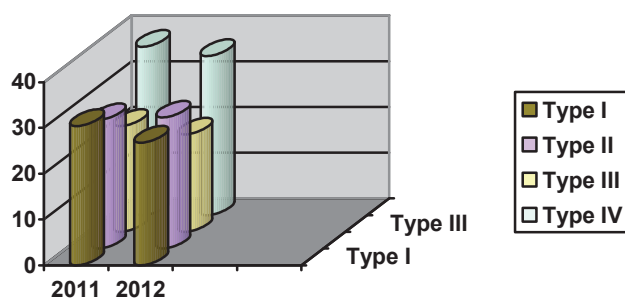
Group	Recruitment as on 31.03.2012				
	Total Vacancies	SC Recruited		ST Recruited	
		No.	%	No.	%
C	244	27	11.1	34	13.9
D	7	5	71.4	--	---

**12.9.3** Adequate representation of SC/ST is available.

Group	As on 31.03.2012				
	Total	SC		ST	
		No.	%	No.	%
A	83	23	27.71	5	6.02
B	80	22	27.5	5	6.25
C & D	11771	2886	24.51	648	5.50
Total	11934	2931	--	658	---

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

As on 31.03.2011			TYPE	As on 31.03.2012		
Total allotted	Number allotted to SC/ST	Percentage		Total allotted	Number allotted to SC/ST	Percentage
767	233	30.38	I	856	229	26.75
1534	431	28.09	II	1621	464	28.62
251	58	23.10	III	254	54	21.25
106	39	36.80	IV	115	40	34.78
2658	761	29.00	Total	2846	787	27.78



**12.9.5** Number of employees promoted and the number and percentage of SC/STs respectively during the year 2010-11 vis-à-vis 2011-12.

As on 31.03.2011					Group	As on 31.03.2012				
Total Vacancies	SC		ST			Total Vacancies	SC		ST	
	No. promoted	%	No promoted	%			No. promoted	%	No. promoted	%
-	-	-	-	-	A	-	-	-	-	-
1	-	-	1	100	B	11	1	10	--	--
1021	178	17.41	80	7.83	C&D	1461	213	14.57	105	7.18
1022	178		81		Total	1472	214		105	

### 12.10 **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 a constant interaction with the elected representatives in 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 2011-2012.

Meetings	Date	Total No. of subjects discussed	No. of subjects finalized	No. of subjects pending
With Railway Board officials	08.07.2011	20	08	12
Local meetings	20.12.2012	24	07	17

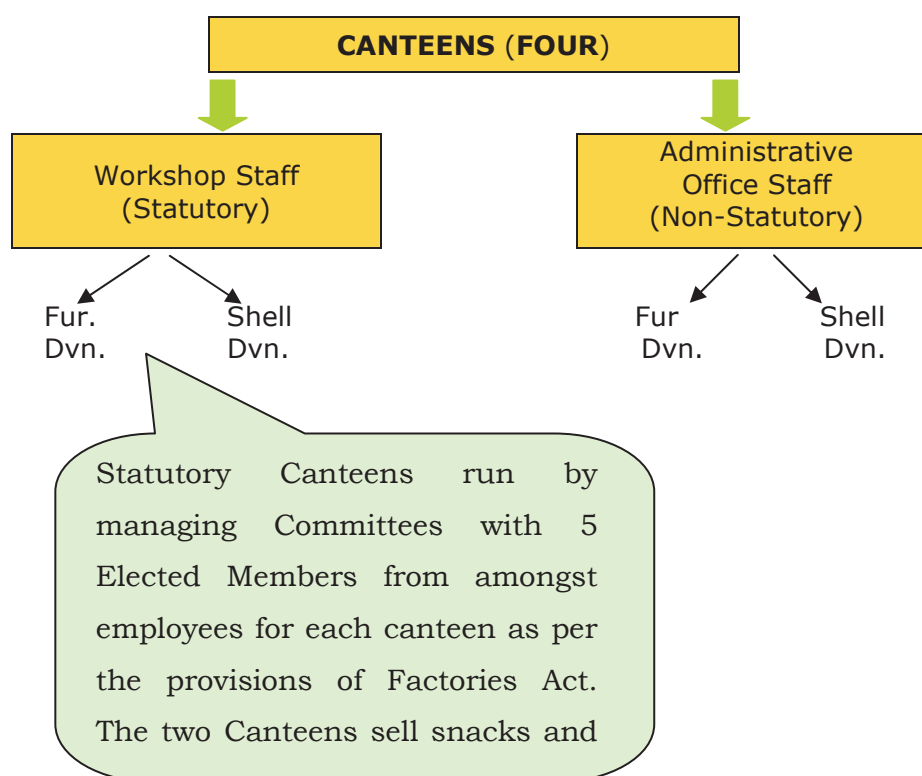
#### 12.10.1 **STAFF BENEFIT FUND:**

The Staff Benefit Fund in ICF is managed by a Staff Benefit Managing Committee which held business meetings in the year 2011-12 and decided on the following expenditure as per details given below: (expenditure up to 31.03.2012).

Sl. No.	Heads of SBF	Expenses for 2011-12
(i)	(a) (i) Education+50% expenses of 2010-11	36,03,700
	(a) (ii) Scholarship for higher education of <u>Girl child</u> of staff in grade pay of Rs.1800/- and below at Rs.1200/- p.m	4,90,500
	(a) (iii) Scholarship for higher education of <u>Male child</u> of staff in grade pay of Rs.1800/- and below at Rs.1000/- p.m	3,91,000
	(b) Recreation other than sports	4,36,720
	(c) Promotion of Cultural activities	20,015
	(d) (i) Relief to distress, sickness, etc.,	12,80,966
	(d) (ii) Relief to distress, sickness, etc., for staff in grade pay of Rs.1800/- and below	1,55,100
	(e) Women Empowerment activities	3,33,766
	(f) Miscellaneous	90,521
(ii)	Indigenous system of medicine including Homeopathy (salary paid to Homeopathy doctor & medicines	2,87,016
(iii)	Training for developing occupational skills of physically/ mentally challenged wards especially girls of railway employees	0
<b>TOTAL</b>		<b>70,89,304</b>

The grant for Scouts & Guides for the year 2011-12 has been received only in April 2012.

## 12.10.2 CANTEENS:



The canteen is controlled and managed by the committee, consisting of elected members and nominated members. Chairman of the committee is an officer nominated by the Administration. The Chairman convenes periodical meetings improve the quality of food items served. The canteen prepares tea, coffee, snacks, breakfast and meals. They serve the same to the employees at their work place. The canteen is functioning on both day and night shifts for the benefit of the employees.

### CANTEEN SERVICE SCHEDULE

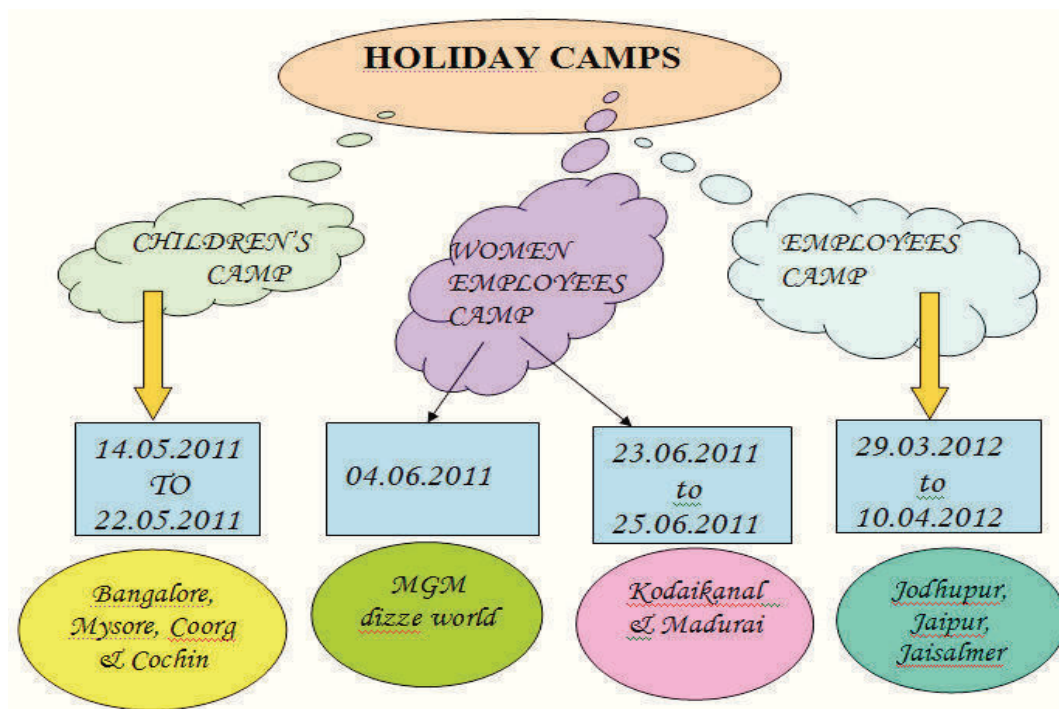
TIME	ITEM
Starts at 06.00 hrs	Breakfast (Special Tiffin @ 10.00 inclusive of paper plate)
07.30 hrs	Breakfast & Tea, Special Tea priced @ 3.00/-
11.30 – 12.15 hrs	Lunch Priced @ 15/-
06.30 – 09.30 hrs 06.30 – 09.31 hrs	Token Time for lunch (sold at main gate)
14.00 hrs	Tea & Snacks
20.30 hrs	Night Shift – Bhath items are served depending on the number of tokens sold.

1. Workers canteen (Shell) catering around 7000 workers/Staff serve breakfast, meals, snacks & beverages in morning/noon and in the evening. While Breakfast and meals are served in the canteen, other items are served in the work spot and Nescafe, tea, coffee and snacks in the extension counter.
2. Prices were revised in Worker's canteen/shell with effect from 31.01.2012. The total volume of sales for the financial year 2011-12 is Rs.57,13,521/-.
3. Workers Canteen/Fur prepares food, snack and beverages serves the same to workers at their work place as well as at the main canteen besides an extension counter (Opposite to Shop-33) shifted to new building. Tea, snacks and Special Tiffin are sold at the extension counter. There are 20 points of service.



Special 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 2011-12 is Rs.46,42,132/- and the total meals token sold are 47,838.

### 12.10.3 RECREATION



All the three camps were very popular and enjoyed by both children and employees.

### 12.10.4 ICF INSTITUTE

The ICF institute was started in the year 1954 to promote recreational and cultural activities among the ICF employees and their family members. As on date around 8745 employees of ICF have enrolled themselves as members of the Institute.

The Institute is managed by a committee of 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 20.11.2010 and the new Institute Managing Committee was constituted on 18.12.2010.

The major sources of income to the Institute are the monthly subscription from the members, which are fixed as low as Rs.10/- for employees in payband PB-I and Rs.15/- p.m. for employees in payband PB-II and above in the revised VI Pay Commission Scales. Other source of income is rent from Dr. Ambedkar Arangam, an Auditorium with 900 seating capacity, where cultural programme, prayer meetings etc. are allowed. Further, the ICF Administration also extends financial support by way of grants from Staff Benefit Fund.

The Institute runs a library for its members, where over 3,000 books on novel, fiction, drama 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, 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. The New Year Compliments were distributed to all the eligible members during March-2011. Children treat was conducted on 26.01.2012 for the wards of ICF Institute Members.

#### **12.10.5 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	934	26	2	9
ICF Silver Jubilee Mat. HSS	1979	VI to XII	English (Tamil & Hindi as 2 <sup>nd</sup> languages)	960	40	4	7
ICF Colony Aided Primary School	1956	I to V	Tamil and Telugu	181	08	1	2
ICF HSS	1960	VI to XII	Tamil, English and Telugu up to X std.	1234	48	2	9

#### **12.10.6 ICF Silver Jubilee Matriculation School (Primary Section)**

Various competitions like interclass competition, fancy dress competition general knowledge and Thirukkural competition were conducted during the year.

#### **12.10.7 ICF Silver Jubilee Matriculation Higher Secondary School**

Different competitions like Quiz, Elocution and Art Competitions were conducted during the year. Special training is given to promising athletes and sports man. The school competed in inter school tournaments and won many prizes in Foot-ball, Basket ball, Ball Badminton in Zonal and district levels. The School celebrated Independence Day, Republic day, Annual day, sports day and open day.

#### **12.10.8 ICF HIGHER SECONDARY SCHOOL**

ICF HSS School conducts NCC Programme for boys and girls. The School has 55 Scouts & 60 Guides. The school conducts various sports events like Basket Ball, Volley Ball, Foot Ball, Hockey and Kabadi etc. Kabbadi Team won the 1<sup>st</sup> place in District Level.

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

- i. Name of the registered : The ICF Employee's Consumer Co-operative Society Co-op Stores Ltd., X-346, Ch-38.
- ii. No. of sections actively : Functioning 3 fair price shops and a textile section.
- iii. No. of membership : 7775
- iv. Amount of share capital : Rs.1,57,000/-
- v. Business turnover including: Rs.99,50,000/-  
Fair price shops.
- vi. Amount of subsidy given : NIL

#### **12.10.10 HOLIDAY HOMES:**

ICF has two Holiday Homes at Udhagamandalam (4 suites) and at Kodaikanal (4 suites) for the benefit of non-gazetted employees of ICF. Construction of two suits at Courtallum is completed and will be put to use soon.

#### **12.10.11 TOURIST COACH:**

The ICF has a Tourist coach from the year 1986. The manufacturing 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 2011-12, the coach was allotted to the extent of 25% of the fortnights for our employees and other official tours.

#### **12.10.12 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 2011-2012 is 3,113 units.

New constructions during the year 2011-2012 :

Type II – 48 units and Type V – 3 units.

### **12.10.13 ST.JOHN AMBULANCE:**

There are 5 Ambulance and 1 Nursing Division of St.John Ambulance Brigade, in ICF Corps having a total strength of 143 members including Corps Commander (Medical) and other officers. Parade and First Aid practices are being conducted regularly. There have been 40 parades and first aid practices, including 4 special parades like Republic, Independence Day Parade etc.,

Annual Re-examination in first aid and home nursing was conducted by the Divisional Commander ( Medical ) all the members have attended. Annual Inspection was conducted by Dy. Commissioner / SJAB/S.Rly & MD/RH/PER/S.Rly.

Apart from the Training, the officers & members have attended various competitions. In this, the SJAB/ICF Corps Won Over All Winners of the First Aid competition in the Zonal level. SJAB/ICF Corps Members have donated blood frequently to the public and employees of ICF during emergencies and surgeries.

### **12.10.14 ICF DISTRICT BHARAT SCOUTS & GUIDES:**

ICF District Association has a registered strength of 1316 members for the year 2011-12 with 6 trainers and 17 Himalayan Wood Badge holders.

ICF District bagged the Best Performance District Award for the year 2010-2011 from the Southern Railway State Bharat Scouts & Guides during Railway Week Celebrations held at Rajah Annamalai Mandram.

## **12.11 ICF SPORTS ASSOCIATION- PERFORMANCE DURING THE YEAR 2011-12**

- ❖ Rotary Club All India Open Chess Tournament at Kodungallore held from 15.04.2011 to 21.04.2011 Shri P. Phoobalan of ICF secured Second Place.
- ❖ All India Open Chess Tournament at Goa from 23.04.2011 to 02.05.2011 Shri P. Phoobalan of ICF secured Third Place.
- ❖ All India Invitation Kabaddi Tournaments at Mangalore from 28.04.2011 to 01.05.2011 ICF Team secured Third Place.
- ❖ Senior Division Football League 2011 held from 2<sup>nd</sup> week of April to 1<sup>st</sup> week of May, 2011 ICF Team secured Third Place.
- ❖ All India Railway Chess Championships at Kolkata from 25.05.2011 to 29.05.2011 ICF Team secured Third Place in the Team event. Shri Y. Syed Anwar Shazuli of ICF won Silver Medal in the Individual event.
- ❖ Third Orissa International Grandmaster's Open Chess Championships at Bhubaneshwar from 27.05.2011 to 06.06.2011 Shri R.R. Laxman representing Indian Railways secured Fourth Position.
- ❖ 27<sup>th</sup> State Football Champions Trophy at Viridunagar from 11.06.201 to 19.06.2011 ICF Team Winners.
- ❖ Syed Ahmed Memorial State Level Invitation Hockey Tournament at Chennai from 01.07.2011 to 10.07.2011 ICF Team.

- ❖ All India "A" Grade Kabaddi Tournament at Kanniyakumari from 08.07.2011 to 10.07.2011 – Position ICF Team Winners.
- ❖ All India "A' Grade Kabaddi Tournament at Thoothukudi from 14.07.2011 to 16.07.2011 – Position ICF Team Winners.
- ❖ International Volleyball Tournament at Tunisia from 23.07.2011 to 25.07.2011 Shri S. Prabhakaran of ICF represented India in the above Tournament.
- ❖ All India Railway Powerlifting Championships at Kolkata from 25.07.2011 to 27.07.2011 Shri P. Raja of ICF secured Silver Medal.
- ❖ Asian Senior Men International Volleyball Championships at Kazhakhstan from 22.08.2011 to 28.08.2011 Shri S. Prabhakaran of ICF represented India in the above Championships.
- ❖ Sr. National Powerlifting Championships at Bhilai from 22.08.2011 to 27.08.2011 Shri P. Raja representing Tamil Nadu secured Silver Medal in 120 Kg. category.
- ❖ Senior Asian Volleyball Championships at Tehran from 21.09.2011 to 29.09.2011 Shri S. Prabhakaran of ICF represented India in the above Championships.
- ❖ South India Power lifting Championships at Coimbatore from 25.09.2011 to 30.09.2011 Shri P. Raja representing Tamil Nadu secured First Place in the 140 Kg. category.
- ❖ 59<sup>th</sup> All India Railway Weightlifting Championships at ICF from 16.11.2011 to 18.11.2011 ICF team secured Third Position.
- ❖ All India Railway Kabaddi Championships at New Delhi from 28.11.2011 to 01.12.2011 ICF Kabaddi Team secured Fourth Place.
- ❖ 62<sup>nd</sup> Senior National Basketball Tournament at Chennai. Shri V. Senthilselvan of ICF was nominated as Coach for Indian Railways Team and Shri M.S. Nazar was nominated as Tamil Nadu Coach for the above Nationals.
- ❖ 60<sup>th</sup> Senior National Volleyball Championships at Chattisgarh from 04.01.2012 to 11.01.2012 Shri S. Prabhakaran and Shri S. Boopathi represented Indian Railways Volleyball Team.
- ❖ 59<sup>th</sup> Senior National Kabaddi Championships at Mumbai from 04.01.2012 to 08.01.2012 Shri D. Suresh Kumar and Shri D. Gopu of ICF represented Indian Railways which won the GOLD Medal.
- ❖ 26<sup>th</sup> All India Railway Body Building Championships at Chakradharpur from 09.01.2012 to 11.01.2012 ICF Body Builders secured the following positions:
  - a) Shri. Kothandaraman, 75 Kg. category – 2<sup>nd</sup> Position.
  - b) Shri K. Baribabu, 80 Kg. category – 2<sup>nd</sup> Position.
  - c) Shri. Jayaprakash, 90 Kg. category – 4<sup>th</sup> Position.



❖ Chief Minister's Award on 27.01.2012.

- (a) Shri R.R. Laxman received an Award of Rs. 5 Lakhs for his GOLD Medal Winning Performance during Commonwealth Championships held at New Delhi 2010.
- (b) Shri G. Veerabadran, received Rs. 1,00,000/- for his Medal Winning Performance during the Commonwealth Championships held at Melbourne during 2005.

❖ National Team Chess Championships at Goa from 25.02.2012 to 06.03.2012. Shri R.R. Laxman of ICF was a Member of Indian Railways Team which won SILVER Medal.

❖ Rapid and Blitz International Fide Rated Chess Tournament held at Sivakasi from 12.03.2012 to 15.03.2012 Shri R.R. Laxman of ICF won the First Place.

❖ All India Railway Ball Badminton Championships at S.Rly. Chennai from 15.03.2012 to 18.03.2012 ICF Ball Badminton Team secured Second Place.

## MEDICAL DEPARTMENT

### HEALTH ORGANISATION

Integral Coach Factory started functioning independently as a 50 bed hospital, upgrading the erstwhile polyclinic during April, 1984 catering to the needs of 12061 employees and their dependents, 8743 Retired Employees and their dependents. The hospital was later upgraded to 101 bed hospital in 1995.

### MAN POWER RESOURCES

There are 167 staff both Gazetted and Non-Gazetted including 2 work charged posts in Gazetted cadre. There are also 2 House surgeons (Medicine & Surgery). Three Hon. visiting specialists, 2 of whom attending the hospital on all days for two hours (Gynaec and Physician) 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 can be called on case to case payment basis. At present the hospital is in tie up with 22 such consultants.

### SERVICES PROVIDED:

- ❖ PD
- ❖ Casualty
- ❖ IPD [Surgical, Medicine, ENT, Gynaec & Obst, Paed, Ortho]
- ❖ 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 one 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 Medical ward 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 68.95 %.

### INJURIES AND ACCIDENTS ON DUTY

Simple: 30 Grievous: 42 Fatal: NIL Total: 72

SURGERIES PERFORMED: Major - 797; Minor - 578; Trivial - 714

## 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 12061 employees and their dependents and 8743 RELHS beneficiaries and their dependants. Average OP attendance per day is 892. 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	: 3002
Number of certified days	: 56751
Average days/certificate	: 18

### **COST OF MEDICAL AND HEALTH SERVICES**

An amount of Rs.8,40,00,000/- 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 is 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., mark special days such, 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 Gynaec, ENT, Ophthal, Surgery, Lab, Ambulance etc.
- ❖ Modern Surgical Procedure are being done (Laparoscopic surgeries, Total Knee Replacement, Semi Arthroplasty, FESS etc.). Phaco Surgery (Cataract) is introduced.
- ❖ Introducing mechanized cleaning for better output.
- ❖ Assistance is being given to patients, who are on long sick leave without getting salary through imprest created from SBF. [Rs.3000.- per month is given]
- ❖ 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 Out Patient Registration is Computerised.

## **SECURITY BRANCH**

### **14.1 Working Of Security Branch :**

10.1.1 The main function of the Security Branch at 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 four ICF Colonies consisting of 3107 staff quarters, a full fledged Technical Training Centre, a 120-Bed Railway Hospital, 4 Schools, Electrical Substations, 3 Auditoriums, 3 Kalyana Mandaps (Marriage Hall), etc., round the clock.

### **14.2 Some of the main duties performed by the Security Branch :**

- Providing enhanced security at 5 factory gates by monitoring the entry and exit of workers in both Shell and Furnishing factories round the clock, besides guarding both 'IN' and 'OUT' Gates of Shell and Furnishing Administrative offices and main porticos.
- Providing security at the 2 Vehicle Gates duly monitoring the entry and exit of both Govt. and private vehicles and drivers/cleaners/coolies.
- Monitoring the movements of Railway materials through various types of gate passes and maintenance of records to this effect.
- Guarding Cash Office, Technical Training Centre, ICF Hospital, Main Receiving Stations and other vital installations inside and outside the factories, round the clock.
- Maintaining surveillance on suspected elements.
- Keeping the ICF premises free from unauthorized persons and initiating action under the provisions of the Railways Act, 1989.
- Collecting crime intelligence and initiating action against the employees/outsideers/receivers indulging in stealthy removal of Railway properties under the provisions of the Railway Property (Unlawful Possession) Act, 1966.
- Monitoring the activities of various Political/Federations based Trade Unions and category-wise Associations and to keep the Administration well informed about the same in order to maintain Industrial peace and harmony.
- Ensuring structural and procedural security arrangements in place for the Factories, etc.
- Ensuring strict adherence of laid down procedures in scrap deliveries.
- Wall patrolling – both inside and outside.
- Providing security during the visits of VVIPs/VIPs, various elections conducted by the Administration, functions organized by the Administration, various agitations/meetings/dharnas by the trade unions, auction sale of scrap material, etc.,
- Enquiry into the theft cases and other untoward incidents.
- Maintaining good liaison with other law enforcing agencies of the State and Central Governments, besides maintaining good relations with sister departments.

### **14.3 Vulnerable Areas :**

ICF being a unit closed by boundary walls and other Access Control Systems, men and materials pass through gates. RPF prevents any possible removal of railway property that may occur through the gates when the Workers, contract labourers and Vehicles pass out of 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 means of removal of Railway materials for which patrolling is also done.

#### 14.4 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 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 it out of ICF premises.

#### 14.5 Crime :

##### 14.5.1 Performance Under The RP (UP) Act, 1966:

a) No of cases registered / detected :

Year	Cases Registered
2010 – 2011	03
2011 – 2012	14

b) Value of property stolen / recovered :

Year	Stolen	Recovered
2010 – 2011	-	Rs. 5,350 /-
2011 – 2012	-	Rs. 1,02,284 /-

C). Arrest made :

Year	OS	RE
2010 – 2011	03	01
2011 – 2012	20	02

##### 14.5.2 Performance Under The Railway Act, 1989:

ICF is a Production Unit and hence does not operate train service nor does it have open line jurisdiction. Movements of unauthorized elements in ICF area are watched and trespassers/hawkers and those causing nuisance are regularly booked under relevant sections of the Railway Act 1989. The details of persons apprehended and amount of fine realized are as under:

Year	Person prosecuted	Fine realized
2010-2011	985	Rs. 3,60,500 /-
2011-2012	1053	Rs. 3,14,800 /-

##### 14.5.3 Localised Case of theft of Railway material :

Year	No of case reported with value	No of case detected with value
2010-2011	Nil	Nil
2011-2012	02 / Rs.67,984/-	02 / Rs. 67,984/-

## **Gist of the Localized cases :**

❖ On 28.07.2011 at about 08.30 hrs the Principal/AWTI/ICF reported missing of one No of SANYO make LCD projector from AWTI valued Rs. 61,984/-. In this connection IPF/TTC registered a localized case and during the course of enquiry on 02.01.2012 at about 03.00 hrs, arrested one outsider at ICF Hospital area and recovered the property along with 07 Nos of Pandrol clips. This case is under enquiry.

❖ On 12.01.2012 at about 15.30 hrs basing up on the information of SSE / Works, IPF / TTC arrested 05 outsiders with Unlawful possession of 09 pieces of Cut Railway trees valued Rs. 6,000 /- loaded in four wheeler. In this connection a case in crime No. 02/2012 Under Section 3 (a) RP (UP) was registered against them and produced before the Hon'ble VIth MM / MS Court. After the trial all the accused persons were convicted and sentenced to pay a fine of Rs. 800/- each i.e. total Rs. 4,000/- which the accused persons had paid and got released.

### **14.6 Assistance Rendered:**

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

### **14.7 Preventive Checks and Crime Detection:**

ICF, being a Production Unit, considerable income is being earned every year through sale of shop refuse. Periodical checks/preventive checks of delivery of scrap materials are done at all levels with regard to description of materials and weight of such refuse.

14.7.1 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 expansion of CCTV system with additional 08 cameras are under process.

14.7.2 Consequent to outsourcing of some work, more than 500 contract labourers are entering the Shell and Furnishing factories daily. Since they are from different places and keeping in view the present security scenario, photo carrying permits are issued to them.

### **14.8 Fire Fighting:**

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

**14.9** Periodical review of Security arrangement is being made and improvement is initiated wherever needed. Security audit of vital instructions was also carried out during 2011 – 12 and deficiencies have been communicated to the in-charge official for necessary modification.

### **14.10 General :**

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



**RIGHT TO INFORMATION ACT 2005**

Number of cases under RTI Act, 2005 for the period from 01.04.2011 to 31.03.2012

Particulars	Opening Balance as on 1.4.2011	Received during the year Including cases transferred to other PIO's	No. of cases sent to other PIO's	Decisions where No. of cases/ appeals denied	Decisions/ information supplied	No. of cases pending as on 31.03.12
First Applications	5	175	23	14	128	15
1 <sup>st</sup> Appeal	1	11	-	-	10	2
CIC cases	1	-	-	-	1	-

**B. LIST OF RTI OFFICERS**

Sl. No	Department	Name of the Officer S/ Shri	Designation	Phone No.
1	Accounts	M.S.Chandrasekaran	Dy.FA&CAO/Shell	26286739
2	Electrical	N.Sambamurthy	Dy.CEE/C	26216360
3	Engineering	C.Ramayan	Dy.CE	26190296
4	Mechanical	Arun Devaraj	Dy.CME/Planning	26260054
5	Medical	Dr.Sathya Babu	Sr.DMO/RH	26146609
6	Personnel	Jagdish Alagar	Dy.CPO	26288709
7	Stores	S. Sekar	Dy.CMM/P/Shell	26263703
8	Security	Sai Chandrasekhar Singh	ASC	26192358
9	Nodal PIO	G. Subramanian	PRO	26263111
10	F.A.A.	Dr.S.X.Sampath Rajan	CPO	26260041

**C – Cases denied under section – 8(1) of RTI Act**

A	B	C	D	E	F	G	H	I	J	K	9	11	24	Others Not as per Sec.2(f)	Total cases
0	0	0	0	0	0	0	0	0	4	0	0	0	0	10	14

**D – Voluntary Disclosure of information**

The information as listed under Section 4(b) of the RTI Act, 2005 are voluntarily disclosed both in ICF Railnet and Internet and the details are also updated from time to time regularly.

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

ON 31-03-2012

Diagram illustrating the organizational structure of the Department of Defense, showing the hierarchy from the Secretary of Defense down to various functional areas and their respective sub-offices.

**Secretary of Defense**

- Chief of Staff (CPO)**
  - SPO/WS
  - SPO/G
  - APO/Bills
  - APO/W
  - APO/G
  - Dy.CPO & Dy.MRA
- FA&CAO/Project**
  - PS Gr-I
  - SSA/DC-I
  - SSA/DC-II
  - SSA/DC-III
  - EDPM — Sr. EDPM
  - PROC/M
  - Sr.AFA/M&P
  - Dy.FA&CAO/W
  - AAO/Books
  - AOC
  - A0/SB/S
  - Sr.AFA/S
  - Dy.FA&CAO/S
  - AAO/SETT
  - Sr.AFA/F
  - Dy.FA&CAO/F
  - Sr.AFA/Esst.
- FA & CAO**
  - AMM/UP/S
  - AMM/P/S
  - SMM/P/P/S
  - SMM/Steel
  - SMM/MRVC/S
  - Dy.CMM/P/S
  - Dy.CMM/DC
  - Dy.CMM/SD
  - AMM/M-I/F
  - AMM/M-II/F
  - SMM/M/F
  - Dy.CMM/M/F
  - AMM/FD
  - Dy.CMM/FD
  - AMM/E/F
  - SMM/E/E/F
  - Dy.CMM/E/F
  - PS/Gr-I
- COS**
  - CMM/S
  - CMM/F
  - CMM/Project
- CMD**
  - ADMOs
  - ANO
  - DMOs
  - Sr.DMOs
  - Admin.
  - CSS/
- CSC**
  - Asst. Sports Officer
  - PRO
  - Asst. SECY.
  - PS Gr-I
  - ASC
  - ALO
  - SECY. TO GM
- CPM & CVO**
  - Dy.CME/Project
  - Sr.VO
  - Dy.CME/PLG/IE
  - SME/PLG
  - Dy.CME/Bogie
  - WN/N/S
  - SME/MRVC/S
  - WN/M/S
  - SME/M&P
  - Dy.CME/PLT & CSO
  - WN/PLT
  - WN/PLT/S
  - Dy.CME/S
  - WN/A-I/S
  - WN/A-II/S
  - WN/A-I/S
  - Dy.CME/Prod.
  - PE/PR/S
  - PE/PL/S
  - CURATOR/RRM
  - Dy.CME/D-II
  - SME/DSS
  - Dy.CME/D-I
  - SME/DSD
  - SME/DEV
  - Dy.CC&M
  - ACMT/S
  - ACMT/F
  - Dy.CME/QC
  - SME/I/S
  - PRINCIPAL/TTC
  - SME/I/F
  - Dy.CME/A/Fur
  - SME/MRVC/F
  - WN/A-II/F
  - WN/A-I/F
  - WN/A-I/F
  - PE/PL/F
  - PE/PR/F
  - WN/Point
  - AEE/MRVC/F
  - AEE/PLG
  - AWN/Elec./III
  - Dy.CEE/Prod.
  - Dy.CEE/EMU
  - SEE/Commng.
  - Dy.CEE/Cons.
  - Dy.CEE/I
  - Dy.CEE/D
  - Dy.CEE/C&D
  - SEE/QC&C
  - CEGE
  - CDE/E
  - PS Gr-I
  - Sr.RBA
  - Dy.CE
  - XEN/S
  - XEN/F
  - AEN/S
  - AEN/F
- CEE & MRA**
  - CEE/QC&C
  - CEGE
  - CDE/E
  - PS Gr-I
  - Sr.RBA
  - Dy.CE
  - XEN/S
  - XEN/F
  - AEN/S
  - AEN/F
- CE**
  - PS Gr-I
  - Sr.RBA
  - Dy.CE
  - XEN/S
  - XEN/F
  - AEN/S
  - AEN/F

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				
DINING 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 WLR RM						2					2
WLR RM	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											
MK/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 / GS	136	153									289
SECOND&THIRD CLASS	67										67
EXPORT											
EXPORT		113	6		30	17			50	50	266
TOTAL	660	670	671	750	584	535	572	644	750	712	6548
11											

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 COACH	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
<b>BROAD GAUGE : MOTOR COACHES</b>											
AC EMU B		29	50	25	23	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 (DEMU)				3	8	5	17	20	14	20	87
DMU DPC US (DHMU)						1	2		6		9
METRO DRIVING MC	12										12
METRO NDMC	30										30
OHE CAR						4	3	17		12	36
ARTV									5	5	10
<b>WIDE BODIED TRAILERS</b>											
AC EMU D	40	45	35	43		53	75	23	25	20	359
AC EMU C	28	52	48	40	57	55	48	88	92	52	560
DC EMU C			10	30	18	31				20	109
DC EMU D			10	30	18	31				7	96
<b>OTHER TRAILERS</b>											
AC MEMU TC				2	85	120	80	30	39		356
ARMV DTC										5	5
METRO TRAILER COAC	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
<b>AC COACH SHELLS</b>											
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
WG FACCW				16	16	38	9	13	20	17	129
<b>AC SPECIAL</b>											
ARMV DTC AC									5		5
WPSAC (POW)					1						1
WPCTAC						14					14
WPCDAC						2					2
WPCTLAC						1					1
RA AC							4				4
MIL ACCW						4	5				9
<b>POWER CARS</b>											
POW WPSRRM					2						2
WLRMAC	9		13	4	28		8	7	11	4	84
MG WPSRRM(POW)		2									2
<b>CONVENTIONAL COACH SHELLS</b>											
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					106	45	161	201	206	316	1035
SECOND CLASS / GS		170	305	424	231	196	325	203	295	306	2455
<b>SPECIAL COACH SHELLS</b>											
RDSO STAFF CAR			1								1
RA / RZ							17				17
RDSO FUEL TEST CAR			1								1
POW WPSRS						1					1
MK/ML			13								13
<b>METRE GAUGE : ALL TYPES</b>											
EMU MC	4	15									19
MG WPCTAC(POW)	1	13									14
MG WPCDAC(POW)		2									2
MG WPCTLAC(POW)		1									1
MG WPSRS(POW)		1									1
THIRD/SECOND	354	475	224								1053
TCN / SCN	162										162
SCZ / SDC	10										10
TLR / SLR		50	80								130
<b>EXPORT</b>											
VNR MG AC					9	1					10
VNR MG 3T					5						5
TZ								27			27
<b>TOTAL:</b>											
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		1392
EXPORT	0	0	0	0	14	1	0	27	0		42
<b>GRAND TOTAL :</b>	1016	1017	1037	1012	806	867	970	987	1055	1019	9786

Shell Production during 2000-01 to 2011-12													
SHELL TYPE \ YEAR	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Total
BROAD GAUGE : MOTOR COACHES													
AC EMU B	18		5	9	27	33	45	30	9	14	30	120	340
AC/DC EMU B	3	43		10	5	17	6						84
AC/DC EMU B MRVC							4	32	152	164	137	12	501
AC MEMU DMC	10		21										31
AC EMU B (MMTS)			18	8							12		38
KOL. METRO MC										12	14	30	56
DMU DPC OB (DEMU)	15												15
DEMU DPC HHP	5	15	7	9	10	8	7	8	14	22	23	28	156
DEMU DPC HHP J&K							5	1				8	14
DEMU DPC 1600 HP												2	2
DETC OB	4	8	7	14	5	10	4	14					66
DETC US	1	2											3
SPART DPC													
ARTV	3									2			3
WIDE BODIED TRAILERS													
AC EMU D	10		7	6	18	20	35	9	4	10	20	86	225
AC EMU C	26		6	5	24	40	49	38	11	21	40	154	414
AC EMU A					12	10	18						40
AC EMU C (MMTS)			22	8							12		42
AC EMU D (MMTS)			21	8							12		41
DC EMU C	21												21
DC EMU D	21												21
DC EMU D HC	6												6
KOL. METRO TC										4	4	10	18
AC/DC EMU C	3	48	1	18	10	14	2						96
AC/DC EMU C MRVC							4	28	156	148	162	3	501
AC/DC EMU D	2	14		5	5	10	3						39
AC/DC EMU D MRVC								2	14	78	82	10	258
AC/DC EMU D HC	1	14		4	6	4							29
AC/DC EMU D HC MRVC							2	14	78	74	73	2	243
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	70	83	426
DMU TC 1 HHP J&K							5					16	21
DMU TC 2 HHP J&K							5					8	13
DMU DTC HHP J&K							5						5
DEMU TC 1600 HP GEN												4	4
DEMU TC 1600 HP VEN												2	2
SPART TC										1		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	20	20	168
EOG SCZ AC (G R)							20	32					52
WG SCZ AC JS		3	17				5	6	2	10	5		48
EOG WCB AC	5	2											7
EOG W FAC	3	2	8	10	15	4	9	28	12	10	10	20	131
ACCW	42	63	50	47	96	64	45	46	62	51	80	105	751
EOG ACCW LHB									4	6			10
WG FACCW	15	15	12	15	34	17	15	20	10	25	20	25	223
SG ACCN											10		10
S WGACCW										2	4		6
RA AC						1							1
POWER CARS													
WLRRMAC	5	3									6		14
CONVENTIONAL COACH SHELLS													
SCZ	38	60	28	127	67		104	230	110	140	100	90	1094
SCZ JS		23	127				16	10	8	30	20		234
WCB	10	10	15	18	54	35	20	15	20	20	20	15	252
SCN	313	401	172	359	324	421	312	59	144	165	136	172	2978
GS	332	265	202	247	207	312	261	471	325	333	279	339	3573
SR/SRD				10			88	51	47			12	208
SLR/SLRD			59	80	130	91	75	26	37	33	85	85	701
SR JS		6	34				6		2	5	6		59
S WGS											4	2	6
S WGSCN			21								14	1	15
S SLRD												2	2
RA						1							1
EXPORT COACH SHELLS													
MG SS SHELLS TO MALAYSIA					11								11
CG COACH SHELLS TO ANGOLA						17	24	15					56
BG COACH SHELLS TO SRI LANKA										1	51	49	101
SPECIAL COACH SHELLS													
JET DEFLECTOR CRANE CAR						4				8			12
INTEGRATED COMMUNICATION COACH										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												1	1
TOTAL	1006	1060	954	1060	1102	1182	1241	1257	1324	1497	1557	1504	14744
11													

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	29	138
DC EMU B													2	2
WIDE BODIED TRAILERS														
AC EMU A & D						11	80	58	65	9	75	62	29	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														
WLRRM										8		3	1	12
CONVENTIONAL COACHES														
FIRST & SECOND CLASS													60	60
THIRD / SECOND CLASS	74	171	209	20	5				46	263			60	848
1st,1Ind & 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	5					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
														0
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	57	0	0	0	0	57
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	205
EXPORT														0
	74	171	249	194	240	372	352	666	558	539	700	635	668	5418
														11

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
115											

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	223
DC EMU B					6	20	8	2	8		44
METRO BATTERY									3		3
METRO DMC		4	4	2	4	4		4			22
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	422
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							57	4		0	117
Total types of Builds	17	24	22	9	12	14	8	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	6777
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											0
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	5	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
											119

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	
WG FACCW	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	42	
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	
11												



Outturn of Coaches during 2000-2001 to 2011-2012													
COACH TYPE / YEAR ==	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	TOTAL
BROAD GAUGE : MOTOR COACHES													
AC EMU B	18		2	12	27	33	45	30	9	14	30	120	340
AC EMU B (MMTS)			18	8							12		38
AC DC EMU B	3	5	10	21	19	14	12	32	156	151	147	15	585
KOL. METRO DMC											4	12	16
KOL. METRO NDMC MC											4	12	16
KOL. METRO NDMC INV											4	12	16
AC MEMU DMC	10		21										31
DMU / DPC OB	15												15
DEMU HHP	5	12	9	10	6	9	10	8	14	22	23	28	156
DEMU HHP J&K							5	1				7	13
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	20	86	228
AC EMU C	26		2	12	25	39	50	38	11	21	40	154	418
AC EMU A					12	10	18						40
AC EMU D (MMTS)			18	8							12		38
AC EMU C (MMTS)			18	8							12		38
KOL. METRO TC											4	12	16
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	150	15	597
AC DC EMU D	2	6	1	10	3	14	3	16	78	76	78	10	297
AC DC EMU D HC	1	12		6	2	8		16	78	74	70	5	272
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	70	83	426
DMU/TC 1 HHP J&K							5					16	21
DMU/TC 2 HHP J&K							5					7	12
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	20	21	219
SCZ AC			8		8		17	7	10	23	20	20	113
SCZ AC JS			20				5	6	2	10	5		48
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	80	100	753
ACCW RM SS	1												1
ACCN												10	10
WFAC	3	2	8	10	12	7	2	35	12	10	10	8	119
EOG ACCW LHB									4	6			10
S WGACCW (Hybrid)												3	3
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	100	70	1074
GSCZ JS			150				16	10	8	30	20		234
BG GS	332	300	170	269	217	300	251	470	348	292	265	343	3557
SCN / GSCN	300	419	170	323	366	414	312	66	129	180	128	180	2987
SR / SRD				10			81	58	47		12		208
S WGS (Hybrid)												6	6
S WGSCN (Hybrid)												15	15
S WGSLRD (Hybrid)												2	2
SR JS			40				6		2	5	6		59
WCB	10	10	13	20	54	35	20	15	20	20	20	15	252
SLR / SLRD			59	80	130	91	75	26	37	33	85	85	701
RA						1							1
SPECIAL COACHES													
RA / RZ													0
RDSO STAFF CAR													0
MK/ML													0
RDSO Fuel Test Car													0
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												1	1
EXPORT COACHES													
COACHES FOR ANGOLA						1	40	15					56
DEMU COACHES FOR SRI LANKA											52	38	90
Total Number of Builds	32	17	34	30	22	29	41	54	30	45	34	36	
GRAND TOTAL	1000	1025	944	1070	1119	1175	1251	1291	1337	1433	1503	1511	14659





## **Integral Coach Factory**

Chennai - 600 038