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INTEGRAL COACH FACTORY, CHENNAI-38.

INAUGURATION

The Integral Coach Factory at Chennai is the first of its kind to be established after Independence for the manufacture of lightweight, all steel and all welded “Integral” railway passenger coaches. The factory was set up in 1955 with Swiss collaboration.

PRODUCTION

ICF’s initial plan was to produce 350 Broad Gauge Third Class shells (unfurnished body of the Railway Coaches) only, which were to be furnished by the Zonal Railways’ Workshops. Later, in view of the severe limitation of capacity of the Railway Workshops and also to take advantage of mass production, a separate Furnishing Division was added on 2nd October, 1962. The capacity was progressively expanded from the initial 350 shells to 750 fully furnished coaches per annum by 1973-74 with additional inputs. This was enhanced to 850 coaches during 1986-87. The production belt was modernised at a cost of Rs.63 Crores with a view to augment production to 1000 coaches per annum. During 1990-91, against a target of 1000 coaches, ICF turned out 1013 coaches.

DESIGN FEATURES

By design, the roof, side walls, end walls and the underframe are joined together by welding, to form a fully ‘integral’ coach shell. The end-wall construction has been made specially strong to make it anti-telescopic to ensure maximum safety to passengers.

From the basic design handed down by the collaborators, ICF has diversified having established its expertise and skill in this field, to design and manufacture more than 127 different types of coaches for Indian Railways and export market. Every time a new type of coach is launched, emphasis is laid on improving passenger comfort, passenger safety and higher speeds. ICF follows standard inspection procedures to ensure quality from raw material stage to the finished coach.

PRODUCT RANGE

ICF has been meeting the needs of the Indian Railways for varied types of coaches however sophisticated the type may be. Some of the important types are :

1. SELF PROPELLED

- Electric Multiple Units for suburban services in Metropolitan cities;
- Diesel Rail Cars;
- Metro Coaches for Calcutta underground Metro Railways;
- Diesel Electric Multiple Units & Diesel Hydraulic Multiple Units for non-electrified routes and Mainline Electric Multiple Units for long distance inter-city commutership.

2. AIRCONDITIONED&NON-AIRCONDITIONED PASSENGER CARS

- Airconditioned Sleeper Coaches of first & second class;
- Airconditioned Chair Cars of first and second class;
- Double Decker Coaches with seating capacity for 148 passengers as against the conventional 90 passengers.

3. SPECIAL COACHES

- Airconditioned & Non-airconditioned Pantry Cars
- High Capacity Power Cars for Shatabdi & Rajdhani Express Trains
- Airconditioned Military Ward Cars for Indian Army.
- Airconditioned Saloon Cars, Dining Cars of the luxurious Palace-on-Wheels train.

EXPORT

ICF's achievement on the export front has been enviable since its inception. Against stiff international competition from more advanced countries like Japan, etc., ICF secured several export orders most of which are repeat orders. So far, 359 bogies and 485 coaches including air-conditioned coaches have exported to 11 Afro-Asian countries. ICF has bagged a number of awards for Export Excellence also.

DESIGN & DEVELOPMENT EFFORTS

Complementing the existing design capacities and facilities, a fully computerised Design & Development Cell has been set up with sophisticated state-of-the art Computer designing facilities and testing equipments both for coach components and raw materials.

FOR BETTER TRAVEL

ICF has carved a niche in the Indian Railway system by constantly improving the 'quality of travel' through its passenger coach design which has undergone a sea-change from the days of bye-gone era of mere 'transport of passengers'. There has been a steady growth both in the quality and quantity of its production.

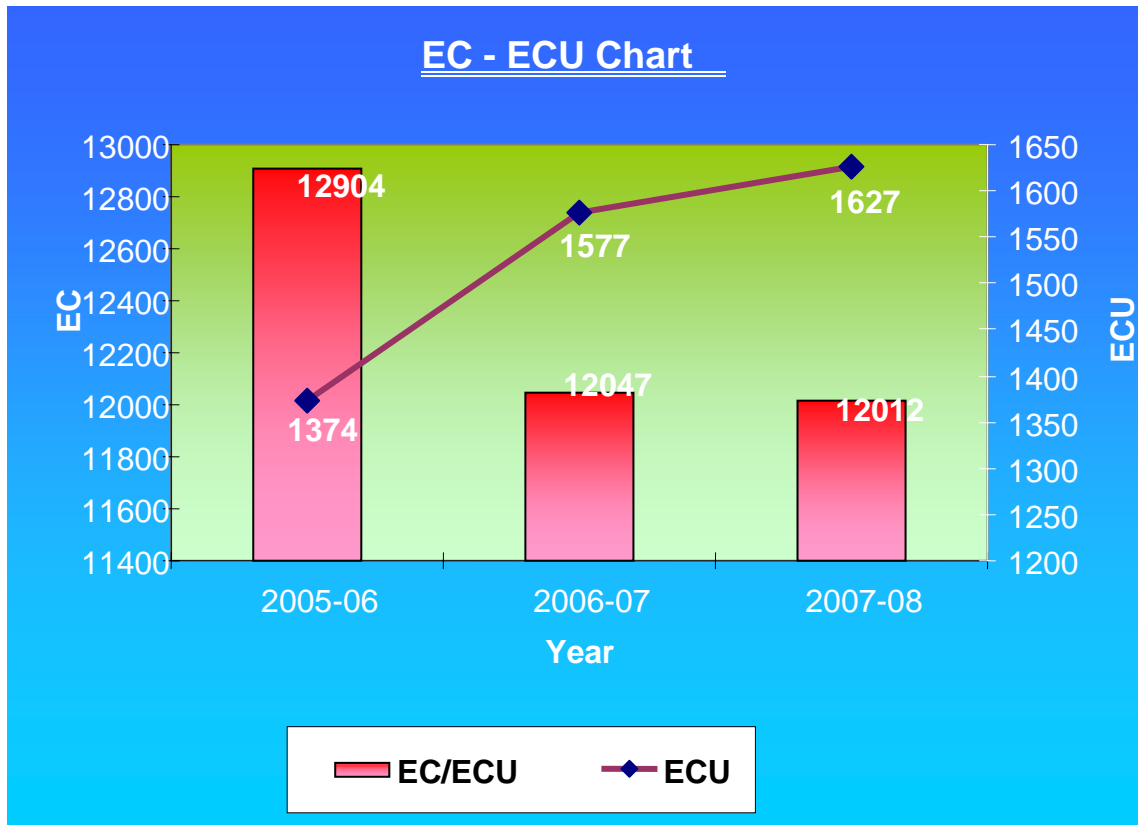
As a milestone in this endless travel, ICF has obtained the "ISO.9001" certificate for the quality systems from M/s.TUV, Germany. ICF is also on the anvil of implementing the total quality systems management in every sphere of its activity.

All this has been made possible through ICF's commitment to progress and improvement with its dedicated work force functioning in a contented atmosphere in pleasant surroundings and working conditions. Several welfare schemes like staff quarters, adequate clean water supply, improved medical facilities, encouragement in sports activities, etc., are provided.

FOR BETTER TRAVEL is our motto and we will continue to live up to it.

20 (ii) : Energy Consumption :

EC/ECU vs ECU



EC/ECU vs ECU		
Year	EC/ECU	ECU
2005-06	12904	1374
2006-07	12047	1577
2007-08	12012	1627

EC: Energy consumed in kWh
ECU: Equated coach unit (production)

- Target** - Energy Consumption/ECU is 15675 units
- Actual** - 12012 units
- % of reduction in EC/ECU during 2007-08** } - 23.37%

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ENERGY CONSERVATION COMMITMENT

- The management is committed in implementation of Energy Policy and Energy Conservation measures stipulated from time to time.
- Energy cell is constituted to plan and monitor energy efficient measures.
- To use star rated energy efficient products approved by BEE.
- Energy Conservation Week was organized from 14.12.2007 to 21.12.2007. During this week various programmes as detailed in the enclosure were organized. Pamphlets indicating various energy conservation tips in English and Tamil were distributed to employees and township (Copies enclosed). Cash award was given to the employees who had participated in the Quiz programme.



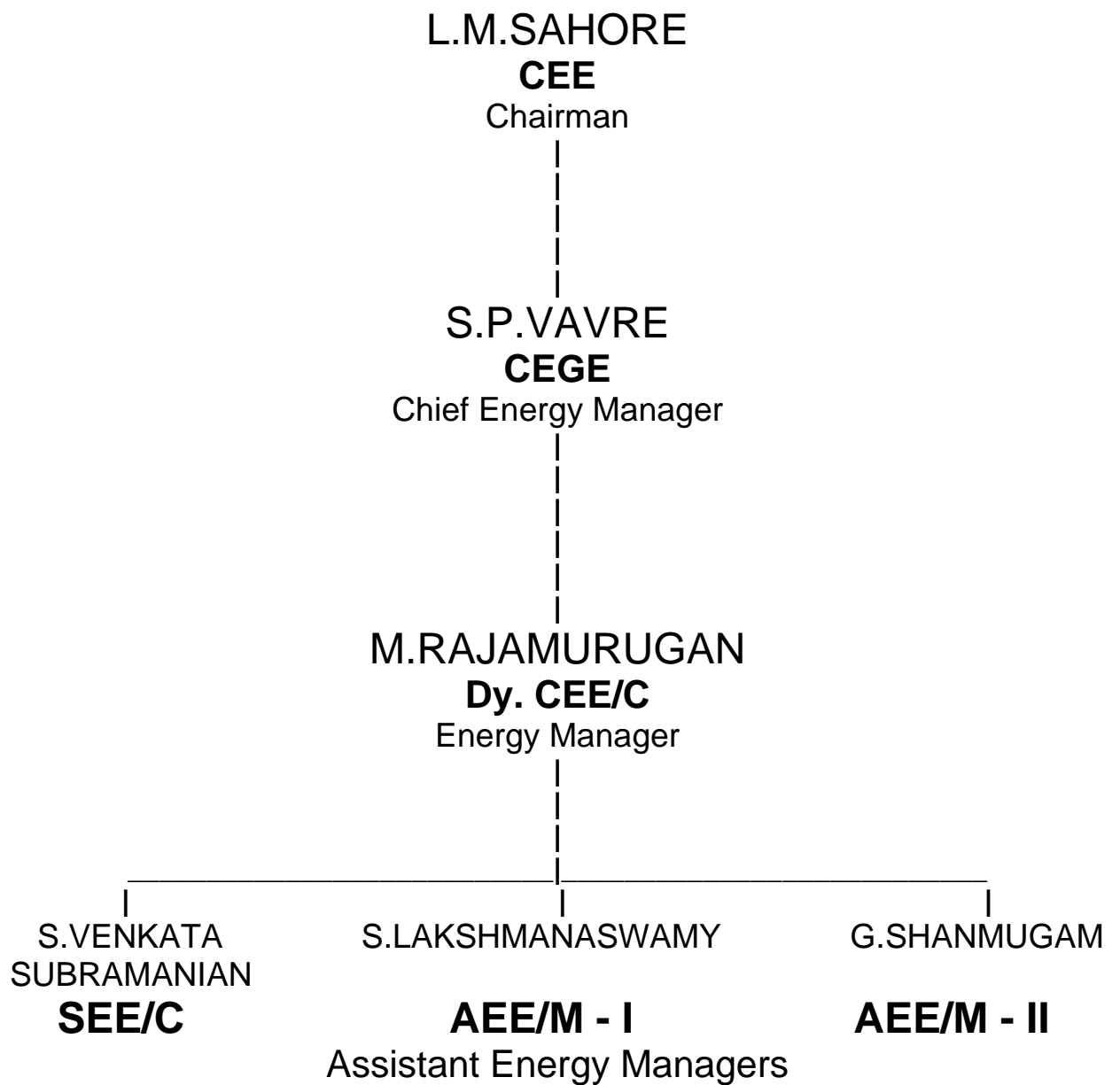
INTEGRAL COACH FACTORY
CHENNAI
(MINISTRY OF RAILWAYS)

ENERGY POLICY

- Optimum utilisation of different forms of energy sources.
- To confine the Energy Consumption per Equated Coach Unit (ECU) within 5% less than the targets.
- Continuous monitoring of consumption pattern and implementation of energy conservation measures so as to achieve reduction in consumption in absolute terms also.
- Installation of energy efficient equipments, utilities etc.,.
- Inculcating energy consciousness among employees and their families.
- Enforcing the above points for reduction in emission of Green House Gases.
- Maximize usage of renewable energy sources.

S.RAJAMURUGAN
ENERGY MANAGER.

ENERGY MANAGEMENT GROUP



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WRITE UP FOR MAJOR ENERGY CONSERVATION
ACHIEVEMENTS DURING THE YEAR 2007-08.

1. In Control Panel of machinery and plants 800 nos. of 15 Watts IC lamps were replaced with 0.5 Watts modular LED indication lamps which resulted in a savings of **Rs. 4.42** Lakhs per annum.
2. Conventional magnetic chokes were replaced with Electric ballasts in 300 Nos. of fluorescent light fittings installed in administrative buildings, service buildings, colonies and hospital, which resulted in a savings of **Rs.0.87** Lakhs per annum.
3. The existing fluorescent light fittings of 36/40W are being replaced with energy efficient T5 28W fluorescent light fittings. During the year 2007-08, 420 Nos. of 40/36W lights were replaced with 28W T5 lamps, resulting in a savings of **Rs. 1.20** Lakhs per annum.
4. In machines 60W IC lamps are used as machine lamps. During the year 2007-08, 50 Nos. of these IC lamps are replaced with 11 W CFL lamps. This achieved in energy saving of **Rs.0.52** lakhs per annum.
5. The existing 100 nos. of 60W IC lamps provided in stair cases of colonies were replaced by 11W CFL and resulting in a savings of **Rs. 1.02** Lakhs per annum during 2007 - 08.
6. Inside workshops, 300W IC lamps were provided in stanchions and each of these were replaced with 150W MH lamps. During 2007-08, 400 lamps were replaced, which resulted in a saving of **Rs. 5.7 Lakhs** per annum.
7. During 2007-08, replacement of 2300 nos. of conventional fan regulators with electronic regulators in administrative buildings and colonies resulted in savings of **Rs. 3.44 Lakhs** per annum.
8. In LT distribution network, capacitor control panels are located in different shops and were operated manually. By providing APFC panels, power factor is monitored and controlled more preciously. 3 Nos of panels are installed during the year 2007-08 and **Rs. 6.0 Lakhs** per annum is earned as incentive from State Electricity Board.
9. During 2007-08, provision of natural lighting inside the shop floor resulted in savings of **Rs. 1.43 Lakhs** per annum.
10. Solar Water Heaters of 1500 litres capacity are installed in ICF Rest House during 2007-08. The solar water heater replaces 1 No. of 2 kW electric storage geysers. This results in yearly saving on energy cost of **Rs.0.45** lakhs.

11. Timers are provided in the lighting control panels in residential colonies to switch off lights after midnight hours. Which resulted in a saving of **Rs.1.00** lakhs per annum.
12. The air circulating fans provided for human comforts are not regularly switched OFF by the staff during lunch hours and non working hours. During 2007-08, 500 Nos of controllers were provided for switching OFF the power supply to Air circulators and annual saving in energy to the tune of **Rs 6.40** lakhs has been achieved.
13. In LT Distribution network, the overaged Distribution Transformers (750kVA) are replaced with new transformers having laser scribed core in lieu of CRGO core. Even though initial investments are more, transformer with laser core consumes 500Watts less than that of CRGO core transformer. During the year 2007-08, three Nos of transformers with laser core are installed and resulted in saving of **Rs. 2.36** Lakhs per annum.
14. During 2007-08, provision of turbine air ventilators in workshop rooftops in place of roof exhaust fans resulted in saving of **Rs.1.26 Lakhs** per annum.
15. During 2007-08, replacement of 6 nos. of plugging type brakes by DC injection brakes in 9C lathes resulted in saving of **Rs.1.67 Lakhs** per annum.
16. In LT distribution network around 10 nos. of Distribution Transformers are switched during non-working hours, this resulted in a savings of **Rs. 2.92 lakhs** per annum.
17. During night 40% of bay lights are switched off by timers provided in the lighting control panel, which results in a savings of **Rs. 7.39 Lakhs** per annum.
18. The air compressors are switched off during lunch hours and shift changeover time, which results in a savings of **Rs. 6.60 Lakhs** per annum.

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ENERGY CONSERVATION PLANS AND TARGETS for the Year 2008-09

Sl. No.	Description	Qty.
1.	Provision of CFL fittings in place of 60/40 watts IC lamps in toilets, bathrooms and kitchens in residential quarters – Phase I before 31.03.2009	1000 nos.
2.	Provision of 28 watts T5 fittings before 31.03.2009	1000 nos.
3.	Reduction in Energy consumption of compressors in shell division by 2% during 2008-09	
4.	Provision of energy efficient motors in roof jigs in 2008-09	5 nos.
5.	Provision of LED based fittings in place of FL fittings in corridors of admn. building	10 nos.
6.	Provision of Occupancy sensors in Administrative Buildings.	20 nos.
7.	Installation of LASER core transformers	3 nos.
8.	Provision of Energy Saver for lighting circuits	4 nos.
9.	Provision of Energy saver for welding sets	75 nos.
10.	Installation of solar based CFL fittings	2 nos.

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ENVIRONMENT AND SAFETY

ICF has got ISO 14001 system certified by M/s. RWTUV, Germany from the year 2001. “ENVIRONMENTAL POLICY” has been formulated and a copy of the same is enclosed.

ICF is giving paramount importance to safety. A separate ‘SAFETY CELL’ is functioning in Shell and Furnishing Divisions of our factory. “HEALTH AND SAFETY POLICY” has been formulated and a copy of the same is enclosed.

ICF is planned for “ Occupational Health and Safety Assessment Systems” certification and in this process, a consultancy contract with M/s.Allied Boston India Pvt. Ltd., Delhi has been entered.

HEALTH & SAFETY POLICY

- The Management is committed to the Principle of SAFETY FIRST and there shall be no compromise on SAFETY. No other activity will take precedence at the cost of SAFETY.
- It is the responsibility of everyone at ICF to attain and maintain healthy and Safe working atmosphere in the factory,
- All the employees are committed to work safely so as to ensure their Personal Safety and also to make the environment free of pollution in and around the Factory.
- The management and the employees are committed to attain the goal of ZERO accidents through education and training on Health and Safety to all employees and the contract labour.

GENERAL MANAGER
INTEGRAL COAH FACTORY
CHENNAI – 600038.