

**Report of the
Comptroller and Auditor General of India**

On

**Information Technology Audit of
Crew Management System in Indian Railways**

for the year ended March 2015

Laid in Lok Sabha/Rajya Sabha on_____

**Union Government (Railways)
Report No.47 of 2015
(Information Technology Audit)**

CONTENTS

	Paragraph	Pages
Glossary		i – vii
Executive Summary and Major Findings		viii – x
Recommendations		x-xi
Chapter 1 – Introduction		
CMS Objectives	1.1	1-2
System Architecture	1.2	2
Organization	1.3	3
Audit Objectives	1.4	3-4
Sample Size and Audit Scope	1.5	4
Audit Methodology	1.6	4-5
Acknowledgement	1.7	5
Chapter 2 – Status of Achievement of Objectives of CMS		
Discrepancy in Sanctioned Strength/Men-in-position as shown in CMS <i>vis-a-vis</i> Manual Records	2.1.1	6
Incorrect/Irregular Inventory of Crew	2.1.2	7
Incomplete Particulars of Crew	2.1.3	8
Incorrect/Invalid Data Pertaining to Pay Particulars	2.1.4	8-9
Incomplete/Incorrect Data Relating to Inactive Profile of Crew	2.1.5	9
Incorrect/Incomplete Family Profile Data	2.1.6	10
Incorrect/Incomplete/Irregular Loco Holding Details	2.1.7	10-11
Incorrect/Incomplete Data of Stations and Routes	2.1.8	11
Booking of Crew using Fetch Crew All option Rather than Fetch Crew as per Rule option	2.1.9	11-12
Irregular Crew Calling Time	2.1.10	12-13
Irregular Crew Call Received/Acknowledged Time	2.1.11	13
Irregular ‘sign on time’ of Crew	2.1.12	13-14
Delay in Supervisory Approval of Crew Sign on Time	2.1.13	14
Irregular Supervisory Approval Time of Crew Sign off	2.1.14	14-15
Irregular Crew Sign on <i>vis-a-vis</i> Crew Sign off Time	2.1.15	15
Booking Through Mobile Short Message Services (SMS) – Non-usage of SMS	2.2.1	15-16
Incorrect Generation of Mileage Reports	2.3.1	16-17
Manual Maintenance of Records	2.3.2	17-18
Failure in Monitoring Crew Road Learning Training	2.4.1	18
Failure to Provide Effective MIS Reports for Monitoring Crew Training	2.4.2	18-19

Discrepancies in loco details used for validating crew competency	2.4.3	19
Lack of provision for Safety tools Sign on/off	2.4.4	19
Non-feeding of Caution Orders/Circulars	2.4.5	20
Booking of Crew on Continuous Running Duties Beyond 10 hours	2.4.6	20
Grading of Crew by Loco Inspectors – Discrepancies Thereof	2.4.7	20-21
Counselling of Crew – Discrepancies Thereof	2.4.8	21-22
Poor Usage of QUICK as a Tool for Upgrading Crew Knowledge	2.4.9	22
Poor Implementation of Breath Analyzer (BA) Units	2.4.10	22-23
Wrong Configuration of Allowances for Non-running Duties/Training at Headquarters/Outstation	2.5.1	23-24
Inconsistencies in Configuration of Admissible Kilometrage for Outstation Duties in CMS	2.5.2	24
Incorrect Charging of Mileage Allowance	2.5.3	24-25
Generation of Mileage Allowance – Non-validation of/Delay in Sign on/off Time, Wrong Configuration of Allowances etc.	2.5.4	25
Same Crew Sign on/off Time from Same Lobby – Generation of Irregular Mileage Allowance	2.5.4.1	25-26
Crew Sign on/Sign off at the Same Time From Two Different Lobbies – Generation of Irregular Mileage Allowance	2.5.4.2	26
Wrong Configuration of Minimum Guarantee /Handicapped Section	2.5.4.3	26-27
Wrong Calculation of Ghat Allowance	2.5.4.4	27
Computation/Payment of Excess Shunting Mileage Allowance Due to Late Signing off	2.5.4.5	28-30
Time Lag in Data-updation Leading to Inadmissible Computation/Payment of Officiating Mileage Allowance	2.5.4.6	30
Increase in Percentage of Non-programmed Utilisation of Crews to Their Programmed Utilisation over the Years	2.5.5	30-31
Comparison of Crew Movement Data <i>vis-a-vis</i> FOIS/CMS/COA Train Departure/Arrival Time	2.5.6	31
Chapter 3 – Review of Application Controls		
Multiple Traffic Advice(TAs) of Same Train – Non-validation of Crew Competency	3.1	32-33
Discrepancies in Traffic Advice Data/Incomplete Data	3.2	33
Multiple Acknowledgement of Call	3.3	33-34
Non-capturing of Train Number	3.4	34
Non-capturing of Traction Details	3.5	34

Non-updation of Training, Leave and Security Records of Crew in CMS	3.6	35
Non-capturing of Correct Data for Cancellation of TA	3.7	35
Improper Capturing of Reasons for Changes in Sign on/off Time of Crew	3.8	36
Review of 'Lobby Utilization Reports' Data	3.9	36-37
Inconsistency in Output Reports	3.10	37-38
Non-usage/Incomplete Usage of Abnormality Module	3.11	38
Non-usage of Link	3.12	39
Chapter 4 - Review of IT Security		
Physical Access controls	4.1	40-41
Logical Access control – Password Policy	4.2	41-42
Poor User Profile Management	4.3	43-44
Non-monitoring of Activities of Database Administrator(DBA)/Lack of Audit Trail	4.4	44-45
Non-installation/Updation of Antivirus and Operating System Patches	4.5	45
Deficiencies in Business Continuity Plan/Disaster Recovery Plan (BCP/DRP)	4.6	45-46
Non/Irregular Maintenance of CMS data backup	4.7	47
Chapter 5 – Review of Contracting Issues, IT Operations, Project Management/Monitoring		
Incomplete Project Implementation	5.1	48-50
Poor Planning for Implementation	5.2	50-51
Non-implementation of Project Within Target Date	5.3	51
Lack of Trained Personnel to Operate the Terminals	5.4	51-52
Non-usage of CMS	5.5	52-53
Manual Reporting of Various Type of Information by Different Lobbies to Control Office	5.6	53
Contracting Issues – Supply of Hardware/Thin Clients and Maintenance Thereof	5.7	53
Non-execution of Annual Maintenance Contract at CMS Locations	5.7.1	53-54
Non-replacement of Over-aged and Defective Hardware and Non-maintenance of Stock for Spares	5.7.2	54
IT Operations/CMS Operations	5.8	54
Custodian of Lobbies Not Fixed	5.8.1	54-55
Non-provision of Dust Free and Air Conditioned Environment	5.8.2	55
Chapter 6 – Review of Change Management and Outsourcing of Activities		
Change Management – Lack of Formal Change	6.1	56

Procedure		
Non-updation of CMS Documentation	6.2	56-57
Lack of Dedicated Staff at Lobbies for CMS Operations	6.3	57-58
Chapter 7 – Conclusion and Recommendations		
Conclusion	7.1	59-60
Recommendations	7.2	60-61
Appendix /Annexure		
CMS Server Architecture	Appendix I	62
Statement Showing Discrepancies in the Crew Bio-Data	Appendix II	63
Statement Showing Cases of Important Details of Crew Not Being Captured	Appendix III	64
Statement Showing Incomplete/Incorrect Family Details	Appendix IV	65
Statement Showing Details of Locos having no Corresponding Zone Codes	Appendix V	66
Statement Showing Incomplete/Inconsistent data of Station, Routes, Distance etc.	Appendix VI	67
Statement Showing Details of Transactions/Discrepancies Where Crew Were Booked with Fetch All Option	Appendix VII	68
Statement Showing Results of Analysis of Data of Call Made to Crew	Appendix VIII	69
Statement Showing Results of Analysis of Data pertaining to Call Serve Time and Receive/Acknowledge Time	Appendix IX	70
Statement Showing Results of Analysis of Data Pertaining to Crew Sign on Time	Appendix X	71
Statement Showing Results of Analysis of Data pertaining to Supervisory Approval of Crew Sign on Time	Appendix XI	72
Statement Showing Discrepancies in Supervisor Approval of Crew Sign off Time	Appendix XII	73
Statement Showing Irregularity in Crew Sign on <i>vis-à-vis</i> Sign off Time	Appendix XIII	74
Statement Showing Status of Usage of SMS over Different Zones	Appendix XIV	75
Statement Showing Cases Where LR Due Date was not computed Correctly	Appendix XV	76
Statement Showing Discrepancies in Training Reports/Data	Appendix XVI	77
Statement Showing Discrepancies Noticed in Loco Details used in TA	Appendix XVII	78

Statement Showing Discrepancies in the Crew Counselling Data	Appendix XVIII	79
Statement Showing Status of Breath Analyzer Devices over Different Zones	Appendix XIX	80-81
Statement Showing Details of Discrepancies in the Configuration of Mileage Allowance	Appendix XX	82
Statement Showing Details of Discrepancies in Admissible Kilometrage	Appendix XXI	83
Statement Showing Details of Discrepancies/Irregularities in Crew Sign on Time <i>vis-a-vis</i> Train Departure/Arrival Time	Appendix XXII	84
Statement Showing Discrepancies in Particulars of Traffic Advice	Appendix XXIII	85
Statement Showing Details of Cases Having Inconsistencies in CMS Reports	Appendix XXIV	86
Statement Showing Deficiencies in Security Measures Noticed over Different Zones	Appendix XXV	87
Statement Showing Deficiencies/Irregularities Noticed in the Management of Railway CMS Users at Different Levels	Appendix XXVI	88
Statement Showing Details of Irregularities in the Management of CMS Users	Appendix XXVII	89
Statement Showing Deficiencies in Infrastructure/Business Continuity Plan at Lobbies	Appendix XXVIII	90
Statement Showing Cases of Delay in Commissioning of Lobbies over Different ZRs	Appendix XXIX	91
Statement Showing Details of Non-usage of CMS over Different Zones	Appendix XXX	92
Statement Showing Names of Railway Zones and Divisions Selected as Sample	Annexure 1	93-95
Statement Showing Sanctioned Strength and Men In Position as per CMS and Manual Records	Annexure 2	96
Statement Showing Results of Analysis of Profiles of Active Crew	Annexure 3	97
Statement Showing Number of Blank Records of Active Crew	Annexure 4	98-99
Statement Showing Details of Incorrect/Invalid Data for Different Fields	Annexure 5	100
Statement Showing Reason-wise Analysis of Inactive Status of Crew	Annexure 6	101
Statement Showing Number of Cases of Family Particulars	Annexure 7	102
Statement Showing Loco Holdings Position in CMS <i>vis-a-vis</i> Manual Records	Annexure 8	103
Statement Showing Details of Non-availability/Incorrect Data of Zone/Divisional Codes/Stations in CMS and Differences in Distances recorded in Working	Annexure 9	104-105

Time Table, CMS and RBS		
Statement Showing Booking of Crew Using Fetch All Option Rather Than Fetch Crew as Per Rule Option	Annexure 10	106
Statement Showing Difference Between Train Ordering Time and Crew Call Time	Annexure 11	107
Statement Showing Difference Between Call Time and Call Received/Acknowledged Time	Annexure12	108
Statement Showing Difference Between Crew Sign on Time & Train Ordering Time	Annexure 13	109
Statement Showing Difference Between Crew Sign on Time and Supervisory Sign on Approval Time	Annexure 14	110
Statement Showing Difference Between Crew Sign off Time and Supervisory Sign off Approval Time	Annexure 15	111
Statement Showing Difference Between Crew Sign on and Crew Sign off Time	Annexure 16	112
Statement Showing Position of SMS During 5th September 2014 to 5th December 2014	Annexure 17	113
Statement Showing Reason-wise Position for Non-generation of Mileage Report through CMS	Annexure 18	114
Statement Showing Review of Route Learning Data,- Details of Cases where LR Due Date not Computed Correctly	Annexure 19	115
Statement Showing Position of Grading Done by Loco Inspector	Annexure 20	116
Statement Showing Counselling Details of Crew	Annexure 21	117
Statement Showing Status of Crew Who Have Taken Quiz	Annexure 22	118
Statement Showing Results of Data Analysis of Breath Analyzer Test	Annexure 23	119
Statement Showing Mileage Allowance Charged by CMS for Performing Non-running Duties at Headquarters	Annexure 24	120
Statement Showing Admissible Kilometrage Configured in CMS by IR Lobbies	Annexure 25	121-122
Statement Showing Different Mileage Allowance Charged for Loco Pilot and Guards	Annexure 26	123
Statement Showing Mileage Charged for Zero Duty Hours Transaction	Annexure 27	124
Statement Showing Handicapped Sections	Annexure 28	125
Statement Showing Year-wise Programme Hours and Non-Programme Hours of Crew	Annexure 29	126-127
Statement Showing Results of Comparison of Crew Sign on/off Time with CMS/COA/FOIS Train Departure/Arrival Time	Annexure 30	128
Statement Showing Details of Multiple Traffic Advices Prepared for Crew Booking	Annexure 31	129

Statement Showing Multiple Call Acknowledgement by Crew	Annexure 32	130
Statement Showing Railway Zone Wise Missing Traction Details	Annexure 33	131
Statement showing Wrong/Incomplete Details of Period of Crew Utilization	Annexure 34	132
Statement Showing Details of Password Used by Crew	Annexure 35	133
Statement Showing Details of Password Used by CMS Operators	Annexure 36	134
Statement Showing Details of Password Used by Chief Loco Inspector/Senior Loco Inspector/Loco Inspector	Annexure 37	135
Statement Showing Railway wise CMS Users (ALP/TNC/Call Boy/Porter/Gang-man/RR Bearer/Private Operator) having Supervisory Privileges.	Annexure 38	136
Statement Showing Cases Where Booking and Supervisory Operations Performed by Same Person	Annexure 39	137

PREFACE

This Report of the Comptroller and Auditor General of India for the year ended March 2015 has been prepared for submission to the President of India under Article 151 of the Constitution of India.

The Report contains the results of review of Crew Management System in Indian Railways for the period 2014-15.

The instances mentioned in the report are those which came to the notice during the course of the review; matters related to the period prior to April 2014 have also been included wherever necessary.

The audit has been conducted in conformity with the Auditing Standards issued by the Comptroller and Auditor General of India.

Glossary

Abbreviation	Explanation
3PH	Three Phase Training
ADL	Andul
AEME	Assistant Executive Mechanical Engineer
AK	Akola Junction
ALD	Allahabad
ALK	Allowance in Lieu of Kilometrage
ALP	Assistant Loco Pilot
AM	Additional Member
AMC	Annual Maintenance Contract
AMG	Alam Nagar
ANGL	Angul
ANVR	Anand Vihar
APDJ	Alipurduar Junction
ARVL	Arrival
ASIG	Automatic Signalling
ASN	Asansol
ASR	Amritsar
AWB	Augangabad
AZ	Azimganj
BA	Breath Analyser
BA Test	Breath Analysis Test
BBS	Bhubaneswar
BCP	Business Continuity Plan
BDC	Bandel
BHC	Bhadrak
Bio-metric	Biometric system is used to validate the identity of a crew at the time of his sign on/off by using his physical features like finger prints
BJRI	Bijuri Goods Shed
BLC	Bolda
BMF	Basmat
BoR	Breach of Rest
BRJN	Brajrajnagar
BSB	Varanasi
BSP	Bilaspur
BTI	Bhatinda
BWN	Barddhaman
BZA	Vijayawada
C&IS	Computerisation and Information System
CAO/FOIS	Chief Administrative Officer (Freight Operations Information System)
CC	Crew Controller
CCC	Chief Crew Controller
CCTV	Closed Circuit Television

Abbreviation	Explanation
CDC	Computer Data Centre
CDG	Chandigarh
CEE/ CELE	Chief Electrical Engineer/Chief Electric Loco Engineer
CH	Chandausi
CKP	Chakradharpur
CL	Casual Leave
CLA	Kurla
CLI	Chief Loco Inspector
CME /CMPE	Chief Mechanical Engineer/Chief Motive Power Engineer
CMS	Crew Management System
CNB	Kanpur Central
CNBI	Chandari
COA	Control office Application
COIS	Coaching Operations Information System
COM	Chief Operations Manager
CR	Central Railway
CREW	Crew refer to running staff involve in train operations and includes Loco Pilots, Guard, Shunter etc.
CRIS	Centre for Railway Information System
CRSE/O&F	Chief Rolling Stock Engineer (Operations and Freight)
CSOD	Crew Sign on Details
CSTM	Chatrapati Shivji Terminal
CTC	Cuttack
CTCC	Chief Traction Crew Controller
CTLC	Chief Traction Loco Controller
CTR	Combined Train Report
CUG	Closed User Group
CWA	Chhindwara Jn.
CWI	Chondi
DAR	Discipline & Appeal Rules
Day	Day means a calendar day beginning at midnight of a day/date and ending at midnight of the following day/date.
DBA	Database Administrator
DBMS	Database Management System
DCMN	Divisional Console Manager
DRMN	Divisional Report Manager
DDN	Dehradun
DEE	Divisional Electrical Engineer
DEE Lobby	Delhi Sarai Rohilla Lobby
DGG	Dongargarh
DHN	Dhanbad Junction
DLI	Delhi
DME	Divisional Mechanical Engineer
DMU	Diesel Multiple Unit

Abbreviation	Explanation
DNE	Dhamni halt
DOA	Date of Appointment
DOB	Date of Birth
DOM	Divisional Operations Manager
DPRT	Departure
DRP	Disaster Recovery Plan
DRZ	Dallirajhara
DSL	Diesel
ECoR	East Coast Railway
ECR	East Central Railway
Elec	Electrical
EMU	Electric Multiple Unit
ER	Eastern Railway
FBD	Farrukhabad
FD	Faizabad
FIFO	First In First Out
FOIS	Freight Operations Information System
FZR	Ferozpur
GADH	Goaldih
GHY	Guwahati
GMO	Netaji Subhash Chandra Bose Junction, Gomoh
GPR	Ghorpuri
GZB	Ghaziabad
HDW	Haldwani
HER	Hours of Employment Regulation
HLDD	Haldi Road
HNL	Hingoli (Deccan)
HOER	Hours of Employment and Period of Rest Rules 2005
HW	Haridwar
HWH	Howrah
HYB	Hyderabad
ICMS	Integrated Coaching Management System
ID	Identification
IGP	Igatpuri
IR	Indian Railways
IT	Information Technology
JAT	Jammu
JBP	Jabalpur Junction
JHL	Jhakar
JKPR	Jakhapura Junction
JMP	Jamalpur
JREA	Jhareda
JUK	Jaulka
JUNX	Junona Halt
JUC	Jalandhar City
KCG	Kacheguda

Abbreviation	Explanation
KDJR	Kendujhar Garh
KGM	Kathgodam
KGP	Kharagpur
KGS	Khong Sara
Kiosk	Kiosk is a computer which is used by a crew to sign in and sign off (logout) of CMS. It displays circulars/caution orders for crew, allow crew to change his password and enables a crew to record abnormality noticed by him during enroute journey.
KIR	Katihar Jn.
KLK	Kalka
KKDE	Kurukshetra
KKG	Kekatumar
KNRG	Kanhargaon Naka
KOAA	Kolkata
KOP	Kolhapur
KSIK	Kulapahari Siding Pakur
KTE	Katni Junction
KUR	Khurda Road Jn.
KWAE	Katwa
KXX	Kata Road
KYN	Kalyan
LAP	Leave on Average Pay
LDH	Ludhiana
LI	Loco Inspector
LJN	Lucknow Junction (North Eastern Railway)
LKO	Lucknow (Northern Railway)
LKU	Lalkaun
LMG	Lumding
LNL	Lonavala
Lobby	Lobby is a place where crew members/guards are booked for different types of duties, mark their attendance. A lobby keeps records pertaining to crew rest, counselling, training, mileage etc. Loco Lobby pertains to Loco Crew members and Traffic Lobby pertains to Guards.
Loco Running Staff	Running Staff: Pilot, Asstt. Pilot, Guard and Shunter who are responsible for/associated with duties pertaining to train running/movement.
Loco/Traffic Crew	Assistant Loco Pilot, Loco Pilot Goods/Passenger, Loco Pilot Shunter, Guard etc. responsible for running train.
LP	Loco Pilot
LPG	Loco Pilot Goods
LPS	Loco Pilot Shunter
LR	Road Learning
MAS	Chennai

Abbreviation	Explanation
MB	Moradabad
MCDO	Monthly Confidential Demi-Official
MEMU	Mainline Electric Multiple Unit
MG	Metre Gauge
MGK	Minimum Guarantee Kilometrage
MGS	Mugalsarai
MIB	Motibagh
MIS	Management Information System
MLDT	Maldah Town
MLY	Maula Ali
MoU	Memorandum of Understanding
MRJ	Miraj
MRV	Marsul
MSB	Chennai Beach Junction
MTC	Meerut Cantt.
MTMI	Motimari
NBQ	New Bongaigaon Junction
NCB	New Coochbehar
NCR	North Central Railway
NDLS	New Delhi
NER	North Eastern Railway
NFR	North East Frontier Railway
NG	Narrow Gauge
NGC	New Guwahati Goods Shed
NGP	Nagpur
Night	Night Starts from 22:00 Hrs and continues upto 06:00 Hrs next Day
NJP	New Jalpaiguri
NKJ	New Katni Junction
NMP	Nimpura
NR	Northern Railway
NRW	Narwana
NTSK	New Tinsukia
NWR	North Western Railway
NZM	Nizamuddin
NYG	Nayagarh
OT	Over Time
PAD	Pre Arrival Detention
PAU	Purna Junction
PCR	Power Controller
PD	Promotional Diesel
PDD	Pre-Departure Detention
PF	Provident Fund
PKR	Pakur
PKRZ	Pakur Old Siding and Pakur Quarry Buffer
PME	Periodical Medical Exam

Abbreviation	Explanation
PN	Pending
PNP	Panipat
PNVL	Panvel
PPLC	Pimpla Chaur Halt
PRIME	Pay Roll and Related Independent Modules
PRLI	Parli Vajinath Junction
PRNR	Parjanpur
PRSEL	Pre-selection Training
PSA	Palasa
PSY	Psychological
PTK	Pathankot
PUI	Puri
PWL	Palwal
R	Raipur
RB	Railway Board
RBS	Rate Branch Software
RDBMS	Relational Database Management System
REFD	Refresher Diesel
REFE	Refresher Electrical
REFSC	Refresher Safety Camp
REFT	Refresher Transport
ROK	Rohtak
RPH	Rampurhat
SALP	Senior Assistant Loco Pilot
SBB	Sahibabad Junction
SBG	Sahibganj
SC	Secunderabad
SCR	South Central Railway
SECR	South East Central Railway
SER	South Eastern Railway
SFCM	Safety Camp
SGO	Saugor
SHDT	Shed Duty
SIF	Sirli
Sign off	Time at which a Loco Crew/Guard is considered to be off Duty
Sign on	Time at which a Loco Crew/Guard is considered to be on Duty
SLN	Sultanpur
SMS	Short Messages Services
SNF	Sanat Nagar
SNP	Sonipat
SNT	Sainthia
SR	Southern Railway
Sr, DEE (TRO)	Senior Divisional Electrical Engineer (Traction Rolling Organization)

Abbreviation	Explanation
Sr. DEE(RSO)	Senior Divisional Electrical Engineer (Rolling Stock Organization)
Sr. DEE/OP	Senior Divisional Electrical Engineer (Operations)
Sr. DME (O&F)	Senior Divisional Mechanical Engineer (Operations and Fuel)
Sr. DOM	Senior Divisional Operations Manager
Sr. DOM/OP	Senior Divisional Operations Manager (Operations)
SRC	Santragachi
SRS	System Requirement Specification
SSB	Shakurbasti
SSE	Senior Section Engineer
STA	Satna Junction
STDTO	Stationary Duty Without NDA
SWR	South Western Railway
TA	Traffic Advice
TCC	Traction Crew Controller
TDL	Tundla Junction
TDLE	Tildanga
TKD	Tuglakabad
TLC	Traction Loco Controller
TLHR	Talcher
TNC	Train Clerk
Traffic Running Staff	Staff (Guard) who sits in the rear of the train in a break van
TSS	Terminal Support System
UDL	Andal Junction
UKH	Ukhali Halt
UMB	Ambala
UPS	Uninterrupted Power Supply
USL	Uslapur
VAST	Very Small Aperture Terminal
VSKP	Vishakhapatnam
WCR	West Central Railway
WHM	Washim
WR	Western Railway
ZRs	Zonal Railways

EXECUTIVE SUMMARY

1. Crew Management System in Indian Railways

Crew Management System (CMS) was introduced over Indian Railways (IR) to manage crew assignments to various trains and to improve efficiency in crew operations, their monitoring and compliance with safety requirements and to improve financial management. CMS project was sanctioned by IR during 2005-06 and was expected to be completed by 2010.

In Indian Railways, CMS was planned for implementation at 747 lobbies/locations. It was targeted for integration and implementation as one of the modules of Freight Operations Information System (FOIS) by 2010. As on 31st March 2015, it was rolled out in 372 lobbies which include two training locations and one testing location at CRIS Headquarters.

The extent of achievement of the objectives of CMS was evaluated in Audit and the aspects relating to IT application controls, IT security, continuity of the organization's business, contracting issues, project management/monitoring and change management were also reviewed. The study has revealed that the CMS has failed to fully achieve its objectives.

The major audit findings are as under:

- I. Non-updation/Improper feeding of master data of crew, crew family details, routes, loco holding detail and lack of validation controls led to inaccurate inventory of crew, routes, loco holding, thus, defeating the very purpose of effective monitoring of crew.

[Para 2.1.1 to 2.1.8]
- II. Crew members were booked without ensuring their competency in all respect of the prescribed criteria. Inconsistencies were noticed in data pertaining to assignment and scheduling of crew. Abnormal delay was noticed in approving crew sign on/off activities.

[Para 2.1.9 to 2.1.14]
- III. SMS facility was not actively in use for crew booking. Mileage statements generated through CMS were incorrect and could not be directly used for payment. Manual records were being maintained simultaneously at lobbies resulting in non-achievement of objective of making the lobbies paperless.

[Para 2.2.1, 2.3.1 & 2.3.2]
- IV. Data relating to training/tests for crew was not correctly updated. MIS generated for monitoring crew training were not giving actionable information. Dummy loco numbers were used for validating crew competency for loco which raises suspicion as to the deployment of competent crew. Crew members were booked in excess of the prescribed duty hours.

[Para 2.4.1 to 2.4.3, 2.4.6]

- V. The grading of crew and their counselling was not done as per prescribed periodicity. Data of grading and counselling was not properly maintained as mismatch was noticed between the CMS data and manual records which was not assisting management in the monitoring and deployment of crew.
- [Para 2.4.7 to 2.4.8]**
- VI. The most crucial security measures/devices like Biometric and Integrated Breath Analyser (BA) to validate crew authenticity and competency were not implemented all over IR. Biometric system was introduced over six ZRs and integrated BA system was introduced over four ZRs only.
- [Para 2.4.10, 5.1]**
- VII. Improper configuration of the CMS led to wrong computation of mileage allowance of 21136799 kms. Weak application controls led to charging of mileage allowance even for zero duty hours, mileage allowance was paid even when the crew was absent.
- [Para 2.5.1 to 2.5.4]**
- VIII. Weak application controls deprived the Railway Administration of effective deployment of crew as CMS allowed incorrect capturing of Traffic Advice (TA), train details and booking of crew against such incorrect TAs. Improper reasons were allowed to be captured for TA cancellation, change in sign on/sign off time. Reports pertaining to periodical rest, training, breach of rest, Lobby utilization contained inconsistent/wrong details. The Abnormality Module and Coaching Link Module were not actively in use.
- [Para 3.1 to 3.12]**
- IX. Preventive and detective measures to ensure physical security of resources were not found adequate. Passwords in use did not prevent unauthorized access to the system. CMS user management was found to be weak. Anti-virus patches were not timely updated. Business Continuity Plan (BCP)/Disaster Recovery Plan (DRP) was implemented at local site and was yet to be implemented at remote site/lobby level for ensuring 24x7 CMS operations. Remote site data backup was not maintained. Privileges assigned to users were not commensurate with their job specifications.
- [Para 4.1 to 4.7]**
- X. Proper roadmap could not be drawn for the complete rollout of CMS. Locations were selected/priorities were fixed without considering the feasibility aspect. Poor monitoring of development and implementation of the project resulted in delayed implementation of the project. CMS was not in use by guards/crew at a number of lobbies. Trained personnel were not operating CMS at lobbies of different zones. Lobbies were not integrated as per RB directives. Annual Maintenance Contract at majority of the lobbies was not in place. Custodian of

lobbies was not fixed and IT environment for computerization of lobbies required for smooth CMS operations was not created at a number of lobbies.

[Para 5.1 to 5.8]

- XI. Integration of CMS with other applications of Indian Railways such as Payroll and Related Independent Module (PRIME), FOIS, ICMS, COA was either not achieved or it was not effective enough to serve the needs of the users.

[Para 5.1]

- XII. Change Management Procedure was not defined. The CMS lacked complete and updated documentation for ensuring smooth operations. No dedicated staff was available for CMS operations; crew members (Drivers/Guards) were operating CMS. There was a lack of policy for outsourcing CMS activities.

[Para 6.1 to 6.3]

2. Recommendations

- I. *The Master tables in the CMS database need to be standardized. Necessary validation controls on important fields may be introduced for ensuring completeness and accuracy of data input. It will enhance the user's reliability and dependency on CMS and enable the users to dispense with the system of parallel maintenance of manual records.*
- II. *Effective integration of CMS with Pay Roll Application, Control office Application, FOIS and ICMS should be expedited so that needs of the users may be served.*
- III. *Grading and counselling of crew should be ensured at prescribed periodicity by completely and accurately updating the relevant database.*
- IV. *Implementation of biometrics and integrated BA devices should be expedited at all lobbies to ensure crew validation at the time of sign on/off and that crew remains sober while operating the train respectively.*
- V. *Adequate checks/validation controls should be introduced for data validation. Controls such as dropdown menu/list box etc. may be considered for validating data.*
- VI. *Adequate controls may be introduced and CMS may be configured as per extant orders/authority to prevent excess payment of allowances.*
- VII. *IT Security Policy including backup and password policy should be strictly implemented. Implementation of BCP/DRP at remote site/lobbies should be expedited to ensure uninterrupted operations. Physical security at lobbies may be strengthened. Software patches/updates may be timely and regularly installed.*

- VIII. *The Change Management Procedure should be devised. Formal training mechanism to educate CMS operators about new features of CMS may be ensured and complete/updated CMS documentation should be made available to all concerned.*
- IX. *Dedicated staff for CMS operations should be provided. In case outsourced staff is deployed for CMS activities then there should be approved policy for outsourcing, specifying the individual responsibilities of railway users vis-à-vis outsourced users.*

Chapter 1– Introduction

The Crew Management System (CMS) is a critical IT application of the Indian Railways (IR) for managing crew assignment to the various trains which impacts the safety of train operations. The application aims at managing over one lakh drivers and guards to ensure round the clock safe operations of IR. Though the overall financial investment in the project is only ₹ 80 crore, it assumes significance on account of the nature of business transacted on this application.

1.1 CMS Objectives

The objectives of CMS are:

- a. **To improve the efficiency in operations by:**
 - i. Optimum and effective utilization of crew by maintaining inventory of all crew.
 - ii. Effective scheduling and assignment of train crew.
 - iii. Crew booking through SMS, thus eliminating call boy/book system.
 - iv. Generating computerized mileage reports for direct submission to Personnel branch for payment.
 - v. Using as a tool for making the crew lobbies more or less paperless.
- b. **To effectively monitor crew and to comply with the safety requirements relating to crew management by:**
 - i. Monitoring road learning and training of crew to operate the locomotive of different traction and gauges.
 - ii. Monitoring of training of staff due for refresher courses and also the staff whose competency certificates are due for renewal.
 - iii. Monitoring 10 hours duty in accordance with HOER¹/HER² rules.
 - iv. Scheduling periodic rests.
 - v. Assisting in monitoring by the Loco Inspector/Traffic Inspector of the drivers and appropriately grading of the crew.
 - vi. Serving as a tool for upgrading knowledge of the crew and continuously evaluating their performance.
- c. **To improve the financial management and monitoring by:**
 - i. Serving as a tool for controlling payment of overtime and kilometer allowance.
 - ii. Monitoring crew productivity by calculating total hours of duty worked and total kilometers earned by each staff.

¹ Hours of Employment and Period of Rest Rules

² Hours of Employment Rules

- iii. Providing for cases of acts of malingering like late turning up and leave in excess of 30 days.

The work of CMS was sanctioned in 2005-06. The CMS application was developed by Centre for Railway Information Systems (CRIS), an IT development unit of Indian Railways. The application was hosted at the Computer Data Centre (CDC) managed by CRIS, at Chanakyapuri, New Delhi to run on the Freight Operations Information System (FOIS) network³ of Indian Railways.

The project was planned for implementation at 747 lobbies/locations over different zones of IR and was expected to be completed by 2010. As on 31 March 2015, CMS was under implementation. It was rolled-out in 372 lobbies/locations⁴, constituting around 50 per cent of the total lobbies/locations, against the target of completion of integration and implementation of CMS as one of the modules of Freight Operations Information System (FOIS), among others modules of FOIS⁵ by 2010⁶.

1.2 System Architecture

The design is modeled on three-tier client server technology⁷ using middleware⁸ and a Relational Data Base Management System (RDBMS)⁹.

Data from lobbies is captured through thin clients¹⁰/kiosks¹¹ and sent to the CDC at CRIS through communication links¹² for transaction processing. Application servers at the CRIS are networked and linked to a central database for global level transactions¹³. The central database provides management reports both at zonal level and divisional levels. It is also a repository of all current and historical data. A diagram of the server architecture is given in *Appendix I*.

³A network consisted of physical communication lines, microwave channels and Very Small Aperture Terminal (VAST) devices (A device used to transmit & receive data signal through a satellite)

⁴For lobbies, refer to glossary. Location refers to places other than lobbies like Training Centre, CRIS Headquarters etc.

⁵Rolling Stock Maintenance and Examination, Revenue Apportionment, Crew Management, Control Charting, COIS etc.

⁶As per Railway Budget speech of Minister for Railways for the year 2007-08.

⁷A special type of client/server architecture consisting of three well-defined and separate processes, each running on a different platform: i.e. User Interface, Middleware and Database Management system. User Interface, runs on the user's computer (client machine), middle tier which actually process data, runs on a server called Application server and database management system (DBMS) that stores the data required by the middle tier, runs on a server called the database server.

⁸Middleware is a programme that mediates between two separate but existing programs and allow a program written for one database to access other databases.

⁹Relational Database Management System is a programme that lets one create, update and manage a relational database, data in different tables can be accessed by linking different tables through a common field.

¹⁰A thin client is a low cost, devoid of CD-ROM drive, diskette drive and expansion slots computer.

¹¹Kiosk is a type of computer linked with central servers and is used by a user (crew) for various functions like signing on/signing off his attendance, view circulars, report abnormality noticed en route etc.

¹²FOIS Network

¹³A transaction generated in CMS from any of the terminal/machines having connectivity with CMS which can also be viewed from any terminal/machine having access to CMS (including those viewed from website).

1.3 **Organization**

There is no uniformity in organizational hierarchy prescribed by the Railway Board, for operation, control and maintenance of CMS application at zonal level. At zonal level, it was seen that generally offices of the Chief Mechanical Engineer/Chief Rolling Stock Engineer (Operations & Freight), Chief Electrical Engineer/Chief Electric Loco Engineer & Chief Operations Manager are responsible for implementation of policies decided by Railway Board(RB)/monitoring of working of lobbies.

At Divisional level, offices of Senior Divisional Mechanical Engineer(Operations and Fuel)/Senior Divisional Electrical Engineer (Rolling Stock Organization/Traction Rolling Organization)/Senior Divisional Operations Manager are responsible for providing manpower/infrastructure/monitoring of crew lobbies.

At lobby level, Senior/Chief Crew Controller is Administrative in-charge of the lobby and is assisted by Crew Controller. He is responsible for smooth and proper working of crew/lobby pertaining to various issues of crew/lobby like crew booking, crew sign on/off operations, breath analysis, crew leaves, report generation etc.

1.4 **Audit Objectives**

The IT Audit of CMS was conducted with a view to:

- i. Assess the extent to which the CMS was effective in improving the train operations by evaluating:
 - Whether inventory of crew, loco, stations, route etc. was properly maintained and scheduling and assignment of train crew was effective.
 - Whether crew booking through SMS was effective in eliminating the call boy/book system.
 - Whether CMS was generating computerized mileage reports for direct submission to Personnel branch for payments and the extent to which lobbies became paperless through CMS.
 - Whether monitoring of crew training, crew grading, crew counselling etc. was effective.
 - Whether CMS was effective in controlling payment of overtime and kilometer allowance, monitoring of crew productivity and cases of acts of malingering.
- ii. Review the application controls to ensure that proper authorization, completeness, accuracy and validity of transactions, their maintenance and other types of data input were in place.
- iii. Review the IT security to ensure that it was capable of reasonably protecting all business critical information and information technology

assets from loss, damage or abuse. Review the Disaster Recovery Plan (DRP)/Business Continuity Plan (BCP) to ensure the continuity of the organization's business in the event of unforeseen events.

- iv. Review contracting issues, IT operations and project management/monitoring to ensure that various contracts, IT operations, project management and monitoring aspects were adequately addressed.
- v. Review the effectiveness of change management and outsourcing of activities.

1.5 Sample Size and Audit Scope

- For CMS audit, one division of each zonal railway (ZR) was selected, on random basis, as sample which constituted around 24 per cent of the all divisions of IR. All 109 lobbies of the selected divisions were included in the sample. Details of the divisions and lobbies included in the sample are given in *Annexure – I*.
- The analysis of the transaction data¹⁴ of the most recent nine months, i.e. March 2014 to 5 December 2014, collected from CRIS, was done.
- Online CMS reports available during the period of Audit were reviewed, Joint Traffic Reports (JTR) of Crew and Guards were compared with crew mileage reports and Control office Application (COA) data was also used to verify completeness and other aspects of CMS data.
- For other aspects relating to project management and implementation, audit reviewed CMS project from inception during 2005-06 till 31 March 2015.
- The IT Security evaluation primarily focused on application level security¹⁵.

1.6. Audit Methodology

Audit methodology included scrutiny of records relating to implementation of project over different zones/divisions at the zonal/divisional Headquarters and at lobbies. The CMS reports were reviewed, information pertaining to different aspects of CMS was gathered from various lobbies of the selected divisions using questionnaire, interview and discussion with divisional/lobby officials. Simulation tests were conducted and data was analyzed using Computer Assisted Audit Techniques. For issues related to security, change management, documentation etc., records at CRIS office at New Delhi and at zonal/divisional headquarters/different lobbies were scrutinized.

¹⁴Transaction data is the information pertaining to various crew operations like crew booking, crew signing on/off, crew allowances, grading, rest etc.

¹⁵Application level security encompasses measures taken throughout the code's life-cycle to prevent gaps in the security policy of an application or the underlying system (vulnerabilities) through flaws in the design, development, deployment, upgradation or maintenance of the application etc.

The Entry Conferences were held at zonal level with Railway Administration. The draft review report was issued to Railway Board on 16 June 2015 which was followed by an updated draft review report, issued on 5 August 2015. The Exit Conferences were held at zonal level with Railway Administration. The Railway Board gave the replies to the draft review report in September 2015 and the same have been duly incorporated in the Audit Report. An Exit Conference was also held at Railway Board in which the audit observations were discussed and Railway Administration assured for the remedial action.

1.7 Acknowledgement

The Audit team wishes to express its appreciation to the management and staff of the Railway Administration at Railway Board, Zonal/Divisional Headquarters and lobby level as well as CRIS CMS team for the assistance and cooperation extended to the Auditors during this assignment.

Chapter 2 – Status of Achievement of Objectives of CMS

Audit Objective 1

To evaluate the extent to which the CMS was effective in improving the train operations

Audit Sub-objective: Whether inventory of crew, loco, stations, route etc. was properly maintained and scheduling and assignment of train crew was effective.

An analysis of CMS master data as well as physical records revealed that wrong/incomplete MIS were generated, crew members were booked on the basis of manual records and there was manual intervention in CMS operations as the inventory of crew was incomplete, personal and professional details of crew were inaccurate and incomplete and master data related to locos, routes and stations was also incomplete and inaccurate. In this regard, audit test check revealed the following instances of deficiencies:

2.1.1 Discrepancy in sanctioned strength/men-in-position as shown in CMS vis-à-vis manual records

A comparison of crew's sanctioned strength and men-in-position populated in CMS with the manual records available in the selected lobbies of 16 zones revealed that there were differences between actual sanctioned strength and sanctioned strength as per CMS. Discrepancies were also seen in the men in position.

Over NR, one of the reasons noticed for differences between two sets of records was that crew deputed to other lobbies for temporary duties were shown in CMS as men in position of the lobby to which they were deputed for temporary duty but were shown in the manual records of their parent lobby as men-in-position. Instances of non-updation of CMS data pertaining to sanctioned strength and men-in-position were also noticed over NR and other zones.

This clearly indicated that data in the system was not updated and transfer/retirement entries were not done in time. Such discrepancies are bound to affect management's ability to ascertain the effective deployment of crew.

(Annexure - 2)

In reply (September 2015), RB stated that zonal railways have been advised to update the database.

2.1.2 Incorrect/Irregular inventory of crew

The CMS database was populated with incorrect personal details of the crew, database was not updated and there was lack of adequate validation controls to prevent booking of superannuated crew which has resulted in making superannuated crew available for booking, allowing signing on/off using Identification (ID) number of superannuated crew as well as charging mileage allowance.

Data analysis of CMS database of 16 zonal railways (ZRs), available as on 5 December 2014 revealed instances where age of the crew was less than 18 years (Boy Service), difference between date of birth and date of appointment of crew was more than 50 years, dates of appointment and promotion of crew were same and there were instances where crew had dates of birth and dates of appointment as same.

Instances were noticed over NR and SCR where crew members who had crossed their retirement age but were still found to be active in CMS, available for booking and were booked for duty. However, they did not work the trains. The details of the above observations are given in *Appendix –II*.

A test check of physical records of active crew having crossed superannuation age revealed that:

- CMS database of superannuated crew of Nizamuddin (NZM) and Tuglakabad (TKD) lobbies of Delhi (DLI) division was not updated and at Moradabad (MB) lobby, year of birth of one crew was wrongly recorded in CMS as 1951 instead of 1957 and in another case, superannuated crew was actually booked after a period of more than three months from his retirement, had signed on/off record in CMS and his mileage was also allowed/computed by CMS.

In a reply to audit (July 2015), MB lobby admitted the mistake of entering sign on and movement details of retired crew by the CMS operator and rectified the mistake on detection.

This indicates that CMS did not have adequate controls to validate the correctness of data pertaining to dates (age etc.) leading to populating inaccurate data which results in generation of wrong MIS which may distort the decision making process. Booking of superannuated crew entailed the risk of wrong payment of mileage allowances and security risk to the System as well.

(Annexure–3)

2.1.3 Incomplete Particulars of crew

Effective control over master files is essential to ensure integrity of the data as the reliability of the system depends heavily on the correctness and completeness of the master data. During the evaluation of master files of CMS, it was observed that crew details such as contact number, promotion date, traction etc. were either unavailable or were incomplete. The details are given in *Appendix – III*.

During test check of records, it was noticed that the details in important fields of CMS such as mobile number/address, promotion date, Loco Inspector Name, traction details were not captured/updated necessitating parallel running of manual system and this could affect the smooth operations relating to crew booking/operations, crew allowances and could also affect the overall effectiveness of CMS. Further, it leads to generation of incomplete MIS.

(Annexure-4)

2.1.4 Incorrect/Invalid data pertaining to pay particulars

It was found in audit that values in the fields viz. Basic Pay, Availability Date, Increment Date, Officiating Date and PF Number, were either incorrect or invalid which could affect calculation of allowances and various MIS reports pertaining to deployment of crew. The analysis of data pertaining to above fields for all the 16 zones was as under:

Sr. No.	Field Name	No. of incorrect/invalid records for the fields	Highest incorrect records and zone name
1	Availability Date	280	87 in NR
2	Increment Date	31725	5905 in SECR
3	Basic Pay	3615	916 in SER
4	Officiating Date	83829	12106 in NCR
5	PF Number	4810	1796 in NR

(Annexure-5)

The CMS lacked adequate controls to validate basic details of a crew which results in generation of wrong MIS and may affect integration of the CMS with other applications, besides affecting calculation of correct allowances. In this regard, observations are as under:-

- In the master table containing crew Bio-data, the field for PF code was found to be defined as character with length as 25. As PF number needs to be unique 8 digit number for identification of a crew, the provision of 25 characters length was incorrect leading to invalid PF numbers getting entered in the table. Over NR, PF numbers consisted of one to 16 alpha-numeric characters.

- During test check of records, it was noticed that presently the data pertaining to basic pay, increment date and PF number was not in use and manual records were being relied upon. However, incorrect data pertaining to officiating date leads to wrong or non-booking of crew for officiating purposes and wrong PF number may affect the integration of CMS with payroll application, besides generation of wrong MIS.

In reply (September 2015) to the observations contained in paragraph numbers 2.1.2 to 2.1.4 mentioned above, RB endorsed CRIS remarks that the provision for a number of fields, which are not necessary for crew booking, has been made on user request so as to have complete crew particulars at one place and at the same time it was stated by RB that instructions have been issued to all users for correct and complete data updation.

The reply of RB is not acceptable. As stated above, CMS lacks requisite controls to validate data which includes fields having relevance for crew booking and needs requisite controls for ensuring complete and correct capturing of data to achieve the desired objectives.

2.1.5 Incomplete/Incorrect data relating to inactive profiles of crew

The CMS failed to ensure capturing of complete and accurate data pertaining to inactive status of crew, which may hamper proper deployment of crew on day to day basis, besides generation of wrong MIS. In this regard, observations are as under:

- In case of transfer of crew from one lobby to another, new crew IDs get created through system. Old IDs are retained and shown as inactive in the database. An analysis of master data of CMS revealed that, specific reasons for inactive status of 6442crew of 15 ZRs were not recorded.
- It was found that 2339 crew of 16 ZRs were shown as inactive due to superannuation even though they were not due for superannuation.
- During test check of CMS data with manual records, it was noticed at TKD and NZM lobbies of NR that crew marked as superannuated were actually declared medically unfit and were working on locations other than CMS lobbies. Thus, wrong information was recorded in CMS.

(Annexure - 6)

In reply (September 2015), RB while endorsing CRIS remarks that the bug responsible for saving record without capturing reasons for inactive status has been removed, issued instructions to users for updation of database.

2.1.6 Incorrect/Incomplete family profile data

Maintenance of accurate family profile data is to facilitate further course of action in case of an event in which benefits accrue to the family members. It was, however, observed that correct and complete family particulars such as dependent relation, gender, marital status, father name etc. were not correctly captured. *(Appendix -IV)*

This may result in a situation where benefits due to the dependents are delayed or denied in the absence of manual intervention.

(Annexure - 7)

In reply (September 2015), RB, while endorsing CRIS remarks that the provision for capturing family details was made on the request of users and audit observations have been noted for necessary validation controls, issued instructions to all users for data updation.

2.1.7 Incomplete/Incorrect/Irregular loco holding details

A comparison was made in audit of loco master data as available in CMS with manual stock records/target fixed for loco availability for Electrical & Mechanical departments by RB for November/December 2014 and differences in two sets of records of locos in terms of total number, type and shed were noticed.

As per the RB targets for maintaining loco holding for each ZR for the month of November/December 2014, holding of Diesel¹⁶ and Electric¹⁷ locos was 4259 and 4600 whereas CMS database had 5182 and 4407 Diesel and Electric locos respectively.

The differences in manual and CMS records indicated that either dummy data has been populated in CMS or records of locos were not updated which could lead to wrong usage of loco numbers resulting in non-validation of crew's competency for a particular loco.

In CMS Loco master table, 1700 locos were not having corresponding zone code to group them and make them available when any query based on the Zone was made on the master data. *(Appendix - V)*

(Annexure - 8)

Thus, the data available in the CMS was inconsistent and was not reliable for operational and analytical purposes. Such inaccurate data would prevent the system from validating the loco competence of staff before booking, thereby compromising the safety of operation of trains.

¹⁶ All zones except SCR, ECR and NWR

¹⁷ All zones except NER, NFR, SWR, NWR and ECR

In reply (September 2015), RB endorsed CRIS remarks that now the Loco Master is synchronized with FOIS database. User is asked to get the loco details entered in FOIS for it to appear in CMS to maintain the sanctity of loco data.

In view of the fact that CMS had interface with FOIS database, RB needs to confirm the correctness of Loco database of FOIS for it to appear correctly and completely in CMS.

2.1.8 Incorrect/Incomplete data of stations and routes

During test check of CMS data as well as scrutiny of physical records, instances were noticed where zone and division codes were not available for stations, stations were not available, stations had invalid codes, routes were not available, routes had incorrect distances etc. Non/incorrect defining of stations, routes in the system was leading to manual correction of mileage allowance, besides generation of incorrect MIS. (*Appendix - VI*)

(Annexure - 9)

In reply (September 2015) to discrepancies in stations, RB endorsed the CRIS remarks that data of station master entered in CMS is as per FOIS database. CMS and FOIS data is synchronized in periodicity of every three months or in case of any user request, whichever is earlier.

In reply to discrepancies in routes, RB endorsed the remarks of CRIS that now routes are created from RBS database. Modifications are still allowed in exceptional cases for correction of kms. and user is encouraged to get the data corrected in RBS database itself.

The reply of RB is indicative of discrepancy in the database which is being corrected on a periodical basis, RB needs to correct and complete the database of stations and routes as a one-time exercise to ensure smooth and efficient CMS operations.

2.1.9 Booking of crew using 'Fetch Crew All' option rather than 'Fetch Crew as per Rule' option

As per CMS documentation as well as examination of CMS, there are two options through which list of crew available for deployment is shown by CMS. One is 'Fetch Crew All' option and the other is 'Fetch Crew as per Rule' option. As per CMS documentation, under the first option, CMS validates that crew is not due for Periodical Medical Examination test, REFT/REFD/REFE training, has required loco competency, is not under rest condition etc.

Under the second option, CMS also validates that Road Learning (LR) for the section/route on which the crew has to be booked is not due, Safety Camp training is not due and Automatic Signaling competency is also verified.

For using first option a reason must be entered into CMS. It was seen in audit that booking of crew in majority of the cases was done by using 'Fetch Crew All' option which tantamount to compromising with the safe running of the trains as the additional aspects as mentioned above for deputing crew by using 'Fetch Crew as per Rule' option are overlooked while deputing crew by using 'Fetch Crew All' option.

Analysis of data has revealed that 74 *per cent* of the crew was booked using 'Fetch Crew All' Option. Reasons for using this option were not recorded in large number of cases; more than 8000 types of codes were used for using this option. (*Appendix - VII*)

There is a need to ensure that only competent crew is booked, fulfilling all the conditions required for train operations.

(*Annexure - 10*)

In reply (September 2015), RB endorsed CRIS remarks that CMS does not allow user to book crew using 'fetch crew all' without entering valid reasons and standard reasons in Dropdown Menu have been provided, to help user select proper reasons, since October 2012.

The reply of RB is not acceptable as no Dropdown Menu facility was available to the CMS user for selecting proper reason.

2.1.10 Irregular crew calling time

As per Operating Manual¹⁸, a notice to running staff (Driver/Guard etc.) informing name/description, time etc. of the train in which he/she is booked, is to be served, as far as possible, two hours before he/she is due to report for duty and notice is generally not served to running staff working on fixed links. Further, as per rules¹⁹ different running staff members are generally required to sign on for duty within 10 to 45 minutes before the scheduled/expected departure time of the train.

As per the process of CMS crew booking, call is made to the crew at the time of booking of crew. Data analysis of 2599975 transactions of 16 ZRs revealed that in 6.66 *per cent* transactions, calls were found to be made after train scheduling/ordering time and in 21.52 *per cent* transactions, calls were found to be made more than 165 minutes before/in advance of train ordering time. (*Appendix - VIII*)

Thus, the CMS lacked adequate control to validate call time as it accepted call time much in advance of the expected time of departure of train/ordering time as well as much beyond the expected time of departure of train/ordering time. Further, as observed under paragraph 3.1, Traffic Advices having accurate/realistic expected departure time/ordering time were not used leading to populating of CMS with

¹⁸Northern Railway Operating Manual

¹⁹Indian Railway General & Subsidiary Rules/Manual provision,

wrong data or late trains were not marked as such in CMS, thus, it resulted in generation of wrong information by CMS. Acceptance of call time beyond the expected time of departure of the train by CMS is a major flaw as it establishes that CMS cannot be relied upon fully for ensuring smooth running of trains.

(Annexure - 11)

In reply (September 2015), RB admitted the audit observations for remedial action.

2.1.11 Irregular crew call received/acknowledged time

After making a call to the crew, the crew is expected to receive/acknowledge the call at the earliest. In the case of call served through SMS, it is expected to be acknowledged within 10 minutes²⁰.

An analysis of the call serve time and call receive/acknowledge time of 2745140 transactions revealed instances where calls were found to be received even before the calls were made indicating weak application control. In 16.07 per cent transactions, calls were found to be acknowledged 165 minutes after call were made and in 54.21 per cent transactions, calls were acknowledged within 30 minutes.(Appendix-IX)

(Annexure - 12)

Thus, CMS lacked adequate validation controls as receipt of call prior to the call was being made is very serious flaw in the system and wide variations in call receive time indicates that calls were not acknowledged in-time.

In reply (September 2015), RB admitted audit observations for remedial action.

2.1.12 Irregular 'sign on time' of crew

As per Indian Railways General and Subsidiary Rules, various types of running staff (Driver/Guard etc.) are required to 'sign on' within 10 to 45 minutes of the scheduled/expected departure time of the train (depending upon originating/intermediate station of train). The results of analysis of data of 2771169 transactions revealed that in 26 per cent cases, crew were found to have signed on or after train ordering time and in 12 per cent cases, crew were found to have signed on less than 10 minutes before train ordering time against the requirement of 10 to 45 minutes before expected departure (ordering) time of the train. (Appendix - X)

(Annexure - 13)

²⁰As per CMS Manual

Thus, the above facts indicate that CMS lacks data entry validation controls because there cannot be any possibility of crew signing in after the train ordering time/expected time of departure of the train or the train was not marked late leading to such an eventuality.

Data analysis further revealed that TA with proper ordering time were not used as is evident from the observations made under Para 3.1.

In reply (September 2015), RB endorsed CRIS remarks that audit observations have been noted for necessary remedial action.

2.1.13 Delay in supervisory approval of ‘crew sign on’ time

‘Crew sign on’ activity is expected to be approved by the Supervisor immediately at the time of ‘crew sign on’ for its regularization as it enables crew to ‘sign off’ at destination location.

Data analysis of 3070897 transactions of ZRs revealed cases where Supervisor approval of ‘crew sign on’ time was prior to the ‘crew sign on’ time. In 68 *per cent* cases ‘crew sign on’ time was approved by Supervisor after 30 minutes or more from ‘crew sign on’ time. *(Appendix - XI)*

Thus, CMS lacked adequate data validation controls as it allowed Supervisory approval even prior to ‘crew sign on’ time. Moreover, delay/abnormal delay in Supervisory approval of ‘crew sign on’ time raises doubt as to whether the crew had properly signed on by fulfilling all the formalities, besides leading to further delay in ‘crew sign off’.

(Annexure -14)

In reply (September 2015), RB endorsed CRIS remarks/admission that CMS lacks validation controls.

2.1.14 Irregular Supervisory approval time of ‘crew sign off’

A cycle of ‘crew sign on’ and sign off is treated as complete only after the Supervisor has approved the ‘crew sign off’ activity. Supervisory approval of the cycle of ‘sign on’ and ‘sign off’ is very crucial because only after that, a crew comes under rest state and further activities like crew’s entitlement for allowances, further booking etc. become active.

Data analysis of 1642377 transactions of 15 ZRs²¹ by audit revealed cases where Supervisor was found to have accorded approval even prior to crew sign off’. In 37 *per cent* cases Supervisor was found to have approved ‘crew sign off’ time after a delay of more than one hour. *(Appendix - XII)*

(Annexure – 15)

²¹ All zones except NER

This indicates that the CMS lacked adequate data validation controls as it allowed 'Supervisory sign off' approval even prior to 'crew sign off' time and delay in approval of 'crew sign off' by the Supervisor leads to further non-booking of crew, generation of incomplete Crew Mileage Reports/manual preparation/modification of Mileage Reports.

In reply (September 2015), RB endorsed CRIS remarks/admission that CMS lacks validation controls

2.1.15 Irregular 'crew sign on' vis-a-vis 'crew sign off' time

An analysis by Audit of crew sign on time and crew sign off time of 1367760 transactions approved by Supervisor pertaining to 15 ZRs²² revealed instances where 'crew sign on' and 'sign off' time was same, i.e. the sign on/off transactions were wrongly recorded. In 2.82 per cent transactions, a difference of more than 20 hours between the 'sign on' and 'sign off' times indicated that either the crew had not timely performed his sign off duties or dummy sign off times were approved. *(Appendix - XIII)*

(Annexure – 16)

Thus, acceptance of abnormal/untimely activity of 'sign on/off' by CMS indicates that data entry validation controls were not accurately built in into the system which leads to wrong generation of MIS reports related to crew utilization as well as wrong charging/payment of mileage allowances, as highlighted under paragraph 2.5.4.5.

In reply (September 2015), RB endorsed CRIS remarks that an alert is given at login to Supervisor as well as to TNC where crew is at sign on status for more than 36 hours and stated that zonal railways have been advised to take necessary corrective measures in this regard.

Audit Sub-objective: Whether Crew Booking through mobile SMS was effective in eliminating the Call boy/Book system

2.2.1 Booking through mobile Short Message Services (SMS) – Non-usage of SMS

CMS application has provided a mobile SMS support functionality to its users by using mobiles. SMS facility was mainly for call serving, its acknowledgement and for communicating various other operational alerts.

A review of CMS database pertaining to crew and SMS from 5 September 2014 to 5 December 2014 revealed that only 10.63 per cent of the SMSs sent were acknowledged/replied and 54.30 per cent of the SMSs sent to the crew were shown as 'Pending', SMS service was not

²²All zones except NER

used at 43 lobbies and Closed User Group (CUG) mobile status was not correctly depicted. Over CR, NR, NWR and SCR, only in 16.01 per cent of total sign on transactions, SMS were sent. In 13983 cases, even though Closed User Group (CUG) mobile status was shown as Y, the mobile number was shown as zero on 13 ZRs. (*Appendix - XIV*)

(*Annexure - 17*)

From the findings brought out above, it is clear that SMS services were not being used effectively and comprehensively despite the fact that CMS application has provided a strong SMS support functionality to its users by using mobiles.

In reply (September 2015), RB while admitting the audit observations and endorsing CRIS remarks that remedial action will be taken in respect of observations pertaining to pending cases and zero mobile status, stated that necessary instructions have been issued to zonal railways in respect of audit observations.

Audit Sub-objective: Whether CMS was generating computerized mileage reports for direct submission to Personnel Branch for payments and the extent to which lobbies became paperless through CMS.

2.3.1 Incorrect generation of mileage reports

One of the primary objectives of development and implementation of CMS was to generate Mileage, Over Time (OT) Allowance and other statements for payment to running staff. In order to assess the accuracy of CMS in generating the mileage, OT and other allowances' statements for payment to the crew, a test check of monthly Mileage Statements called Crew Sign On Details (CSOD) was carried out by Audit in selected lobbies. It was observed that the mileage statements generated through CMS needed to be corrected manually prior to sending the final figures to Personnel department for payment. Instances were noticed where though CMS was in use but mileage statements were prepared manually²³ which was against the extant orders of RB; further the CMS generated statements had to be manually corrected due to following reasons:

- Either crew sign on or sign off was manual through the register because of non-working of CMS/operational reasons at the location.(All Zones except NER and NWR)
- Complete details of leave were not entered in CMS.

²³ At CMS BWN (DSL) lobby of ER, mileage of crew was manually computed. At majority of the lobbies of Delhi division mileage of guards was being computed manually

- All the routes pertaining to the lobby were not defined over five ZRs²⁴ in CMS.
- Data entry errors/Wrong sign on/off time entry by outsourced/railway staff over eight ZRs²⁵.
- Missing transactions due to CMS failures/inaccurate/non-updating of crew details (CR, SR, SER, ECoR, NR, WCR and NCR).

(Annexure-18)

2.3.2 Manual Maintenance of Records

One of the prime objectives of automation through CMS is to make the lobbies paperless. However, audit of selected lobbies revealed that:

- Almost all lobbies were found to be taking printouts of Mileage Reports/Summary Mileage Reports from CMS which were being corrected manually and modified data was being manually populated in Payroll and Related Independent Module (PRIME).
- At Jind, GZB and TKD lobbies of NR, OT Allowances were computed manually and it was informed (March 2015) that CMS was not configured to generate OT Allowance Report as per extant orders.
- Following manual records were also being simultaneously maintained in one or more lobbies of the selected divisions of twelve Zones:

Records	Zonal Railways ²⁶
Sign on and Sign off Register/Crew Booking Diary	CR, WCR, SR, WR, SWR, NR, SER, SECR, NCR, ECoR, NWR and NFR (12 ZRs)
Abnormality Register	CR, WR, SWR, NR, SER, SECR, NWR, SCR and NFR (nine ZRs)
List of staff due for PME	CR, SR, NR, ER, SER, NWR and SECR (seven ZRs)
List of Crew Due for Training and Refresher Courses	CR, SR, NR, SER, SECR, NWR and ER (seven ZRs)
Crew Bio data	CR, SR, NR, SER, NWR and ER (seven ZRs)
Pre-departure Detention	CR, NR, NWR and SER (four ZRs)
Circulars and Caution Order Register	SWR, NR, SER, SR and NFR (five ZRs)

Thus, from the above it can be seen that to a large extent manual records were being maintained defeating the CMS objective of making the lobbies paperless.

²⁴ CR, ECR, WCR, SCR and, ER

²⁵ CR, SR, WCR, SWR, SCR, ER, NR and SECR

²⁶ See glossary

In reply (September 2015), RB, while endorsing remarks of CRIS that CMS provides for generation of mileage data in XML format which can be taken in soft form (copy) to prime servers, stated that necessary instructions have been issued to zonal railways regarding audit observations.

Audit Sub-objective: Whether monitoring of crew training, crew grading, crew counseling etc. was effective.

2.4.1 Failure in monitoring Crew Road Learning Training

As per the training requirement of Running Staff, before a crew is deployed on a train, he must be familiar with the route he is going on. For this, every new crew is required to be given three trips for familiarizing himself with the section. If a driver has not operated on a section for over three months, he should be given 'Road Learning Trips' as below:

Duration of Absence	Number of Trips
3 months to 6 months	1
6 months to 2 years	2
Over 2 years	3

Over five zones²⁷, audit found from data analysis that in respect of 3349489 cases, next due date was prior to last drive date.

In reply, RB endorsed CRIS remarks that due date is shown based on the last run 'plus' periodicity (if lapsed). In such case crew is required to complete three runs as per statutory requirement. The LR due date is not changed till all three runs have been completed. Till such time even though drive date is changed based on the run, due date remains the same and will be prior to drive date.

However, the reply of RB is not acceptable due to the fact that instances were noticed where trips were not due but CMS did not compute the next due date as per extant orders. Similarly, instances have been noticed where trips were due still CMS computed next due date which was irregular. (*Appendix –XV*)

(*Annexure 19*)

2.4.2 Failure to provide effective MIS reports for monitoring crew training

An analysis of CMS database revealed that CMS was depicting next due date for training though the Crew did not require the concerned training and the Business Logic of CMS for reckoning next due date for Automatic Signaling (ASIG) training was not in accordance with

²⁷ NR=1317478. ECoR=27069, , ER=25460, SCR=1895560 and SER=83922

the Indian Railway General and Subsidiary Rules (NR-2011).
(Appendix XVI)

Thus, CMS training reports/database were not properly designed to be effective in monitoring crew training.

In reply (September 2015), RB while endorsing CRIS remarks that the issue pertains to data entry errors by the users, stated that necessary instructions have been issued to zonal railways for correct and complete data updation.

2.4.3 Discrepancies in loco details used for validating crew competency

An analysis of Traffic Advice (TA) data by Audit for the period 5 September 2014 to 5 December 2014 revealed that loco type was shown as zero, however, no loco of such type was available in the master data. Similarly data analysis over different railways revealed that dummy numbers of locos like 111, 123, 147, 1111 etc. were used by one or more than one lobby for generation of multiple TAs. Booking of crew against such TAs having dummy loco numbers raises suspicion whether crew competency for actual loco was validated.
(Appendix - XVII)

In reply (September 2015), RB endorsed CRIS remarks that validation for correct entry of loco number with respect to loco type has been introduced in system. However, action taken to prevent usage of same (dummy) loco number in different TAs by different lobbies/same lobby at the same time has not been communicated.

2.4.4. Lack of provision for Safety tools sign on/off

As per rule 4.19 of Indian Railway General and Subsidiary Rule (NR), a Loco Pilot or Guard shall carry the prescribed equipment while on duty with the train and will report the deficiency to his Supervisors for making good the deficiency. However, Audit noticed that CMS did not prompt the crew for confirming whether he had the required safety tools with him when he was signing on duty, though in the CMS database, fields necessary for capturing the requisite details were available.

In reply (September 2015), RB endorsed the comments of CRIS that the issue was not within the scope of CMS. However, the reply is not acceptable because as per manual/codal provision, a crew (Driver/Guard) is required to ensure availability of prescribed tools during duty.

2.4.5 Non-feeding of caution orders/circulars

Over SWR, NFR and NCR²⁸, no circular/caution orders were uploaded in the system. The system of maintenance of registers of circulars/caution orders continued to prevail over all the lobbies of these railways.

In reply (September 2015), RB stated that necessary instructions have been issued to the zonal railways.

2.4.6 Booking of crew on continuous running duties beyond 10 hours

As per Appendix 'B' of NR Operating Manual, running duties of loco/traffic running staff should not ordinarily exceed 10 hours at a stretch. As per review of Working Hours Reports of CMS pertaining to December 2014 to February 2015, it was noticed that out of 23835 crew members, 1948 crew members (*eight per cent*) were on running duties for a continuous period of more than 10 hours.

Booking of crew beyond a period of 10 hours for continuous running duties could affect safe train operations.

2.4.7 Grading of crew by loco Inspectors – Discrepancies thereof.

As per Drivers' Grading Booklet pertaining to their safety categorization circulated by RB in March 2007, Loco Inspectors (LI) have to keep monitoring their allocated drivers as per the periodicity and schedule prescribed by the concerned railway and every driver is to be graded as 'A', 'B', 'C' or 'D' by his LI at the end of the prescribed periodicity.

Newly entered and those promoted as Goods Train drivers are initially put in 'C' category and are re-evaluated at an interval of one year. A crew having a grading of 'B' is to be monitored again for grading at an interval of two years and crew having a grading of 'A' is to be monitored again for grading at an interval of three years.

Analysis of CMS data for 16 zones revealed that out of 37690 loco pilots, 28254 were graded and remaining 9436 (33.39 *per cent*) were not graded as per prescribed periodicity by their concerned Loco Inspectors (LIs).

Analysis from CMS data set shows that 2343 crew belonging to A, B and C categories of five ZRs²⁹ were graded 3 to 49 times within a period of five to six years. Data analysis revealed that 4316 LPGs were graded within one year of their promotion in nine ZRs³⁰.

(Annexure – 20)

²⁸ After 27.08.2012 over NCR

²⁹ NR=585, SCR=1486, WCR=6, SECR=260, ECoR=6

³⁰ ECoR=216, NFR=40, SCR=241, NR=744, SER=516, WCR=1159, SWR=812, WR=108, SECR=480

Thus, periodicity of grading of LPGs has not been followed in accordance with the extant orders as is evident from the data thrown by CMS or the grading has not been timely and accurately recorded/updated in CMS. Thus, CMS has not fully facilitated the decision making based on the results shown.

In reply, RB stated that necessary instructions have been issued to ZRs for proper grading of Loco Pilots/Crew and their monitoring accordingly.

2.4.8 Counseling of Crew – Discrepancies thereof.

In order to increase the knowledge base of a crew, various methods are used like deputing crew to various training courses, their counselling by their LIs etc.

Audit found during the review of the CMS data pertaining to periodicity of the counseling of crew (Grade A, B and C) by their Chief LI/LI for the period prior to 6 December 2014 that around 29 percent crew over NR, 88 per cent crew over NFR and six per cent crew over NWR were not counselled as per the prescribed periodicity. *(Appendix – XVIII)*

Out of total 7840 active crew on CR, data pertaining to counselling of only 1593 crew had been captured in CMS. The number of times the counseling had been done ranged between one to 157.

Over six zones³¹ there were 2167 instances where crew were counseled by Loco Inspector, but IDs of Loco Inspectors, who counseled the crew, were not available on CMS record.

During a comparison of CMS grading and counselling data with Loco Inspector's manual records/divisional records, mismatch were noticed between the two sets of information over NR (Delhi division) and NFR.

Thus, periodicity of counseling was not followed in accordance with the extant orders which could affect smooth train operations or the counselling has not been timely and accurately updated in CMS which may affect decision making based on counselling data available in CMS.

During visit to Delhi Division Headquarters of NR, it was noticed that Loco Inspectors were forwarding manually, monthly reports of crew grading and counselling to Divisional Headquarters and the same details were being further manually compiled for decision making, though the relevant details were already available in CMS and CMS was also generating reports containing relevant data.

(Annexure - 21)

³¹ CR=529, ECOR=773, SECR=446, NR=101, NFR=98, NWR=220 (Total =2167)

In reply (September 2015), RB stated that necessary instructions have been issued to ZRs.

2.4.9 Poor usage of QUICK as a tool for upgrading crew knowledge

QUICK implies Quiz for improving crew knowledge. This option has been provided in the CMS which is a crew knowledge evaluation and improvement game wherein the user is offered a question with four alternatives. Utility and effectiveness of this tool was examined in audit by analyzing the Quiz transaction data and which revealed that out of 63729 active crew analysed over 16 ZRs, only 16401 (25.74 per cent) crew had taken the on line quiz to check their knowledge.

(Annexure - 22)

In reply (September 2015), RB stated that necessary instructions have been issued to zonal railways.

2.4.10 Poor Implementation of Breath Analyzers (BA) units

As per revised policy on drunkenness on duty issued by RB in December 2001, no running staff is to be allowed to sign on for the duty without undergoing breath analyzer test and reading of the breath analyzer test is to be recorded in the signing register. Similar standards are also to be maintained at the time of duty 'sign off'.

Safety Directorate (Railway Board) opined that BA test at sign on/off stage is deterrent as well as initial proof of drunkenness. It is possible if during sign on, a crew is found drunk, he may report sick. Further, if the crew is found drunk during sign off, DAR action can be taken against him. Thus, integration of BA equipment in CMS makes it foolproof against the impersonation and strengthens the checks. It is helpful in checking the menace of alcoholism on duty among the crew and enhances safety in train operations.

It was, however, observed in Audit that BA units have not been integrated with CMS resulting in manual intervention leading to inconsistent values being recorded in CMS, besides leaving a possibility of collusion between the crew and the Supervisor.

Despite knowing the importance of BA testing for the safe running of trains, the Railway Administration/CRIS did not provide for integration of BA units with CMS at the time of System Design stage in 2006, to mitigate the associated risks. The BA units were not integrated in 12 ZRs. The number of lobbies where it has been integrated is miniscule. The details of lobbies where it has been integrated and irregularities due to non integration are given in the *Appendix – XIX*.

(Annexure - 23)

In reply (September 2015), RB endorsed CRIS remarks that CMS final phase, stage-I only has been sanctioned with BA devices, provision has been made available in CMS application to cater to bio-metrics and BA test requirement and newly developed client image needs to be loaded on the kiosk thin clients. Regarding inconsistent values, CRIS remarked that these are data errors generated through trials. RB, in its reply, also stated that necessary instructions have been issued to zonal railways.

However, RB did not elaborate reasons for not sanctioning BA devices for lobbies implemented under phase I, phase-II and stage II of final phase. Moreover, CRIS remarks were not acceptable as data inconsistency transactions pertained to a period of two to three months and remedial action taken in the matter has not been communicated.

Audit Sub-objective: Whether CMS was effective in controlling payment of overtime and kilometer allowance, monitoring of crew productivity and cases of acts of malingering

Audit noticed that incorrect/non-configuration of CMS as per extant orders, delay in timely updating of crew database, lack of adequate means to validate crew sign on/off time, authenticity of crew and inadequacy of application controls led to generation/computation of abnormal/wrong mileage allowance as well as payment of excess mileage allowance thereby defeating the CMS objective of preventing excess payment of mileage allowance. Audit observations in this regard are as under:

2.5.1 Wrong configuration of allowances for non-running duties/training at headquarters/outstation

As per Para 907 of Indian Railways Establishment Manual, when running staff is engaged in or employed for non-running duties (such as Training, Enquiry etc.), they are entitled for payment of an Allowance in lieu of Kilometrage (ALK) for every calendar day for such non-running duties as they may be required to perform. When such non-running duties are performed by the running staff at their Headquarters, they shall be paid the pay element of running allowance, i.e. 30 per cent of the basic pay applicable for the day (*viz.* one per cent per day). When such non-running duties are performed at outstation, they shall be paid ALK as may be specified (i.e. 160 kilometrage per day). A provision has been made in CMS which enables different lobbies to configure the various allowances which are to be paid to different crew members for performing non-running duties at outstation and at headquarters.

A review of the allowances configured in the CMS revealed that lobbies configured the CMS in violation of the rules and there were

cases of charging of 80/120/160 kilometrage per day to crew for attending non-running duties/training at their headquarters. The wrong configuration of CMS resulted in computation of mileage allowance of approx. ₹ 485 lakh. Instances were also noticed where crew was shown to perform non-running duties at other than headquarter, however, his headquarters locations and outstation locations were exactly the same, In CMS, 98 types of non-running duties were defined in the master data of CMS, however, 100 types of non-running duties were found processed under CMS. During physical verification instances of actual payment of kilometrage allowance were noticed though non-running duties were performed at the headquarters. (*Appendix - XX*)

(*Annexure - 24*)

In reply (September 2015), RB stated that necessary instructions have been issued to zonal railways.

2.5.2 Inconsistencies in configuration of admissible kilometrage for outstation duties in CMS

CMS has been configured to pay 'admissible kilometrage' to crew members. Review of configuration of CMS for allowing admissible kilometrage to crew of various lobbies³² revealed major inconsistencies in admissible kms. (to and fro) between two stations e.g. from NZM to CH it was 160 kms., from DLI to CH it was 204 kms. and from NDLS to CH it was 320 kms. Thus, it varied between 160 and 320 kms. between the pair of lobbies/stations of the same cities. The other examples of inconsistencies over NR and other ZRs are given in Annexure 25. During test check, instances were noticed where mileage allowance reports generated by CMS were manually corrected due to wrong configuration of admissible kms. (*Appendix -XXI*)

(*Annexure - 25*)

Thus, the above establishes that the CMS has not been configured properly for charging 'Admissible Kilometrage' due to which manual corrections are being made in the mileage reports and possibility of wrong payment cannot be ruled out.

In reply (September 2015), RB stated that necessary instructions have been issued to zonal railways.

2.5.3 Incorrect charging of mileage allowance

During analysis of mileage reports of November 2014 of Pakur (PKR) lobby of ER, Audit found that system generated mileage allowance of 160 kms. over route number 10151 and 210 kms. over route number 10150 for traversing same distance of 4 kms. between PKR to PKR.

³² NR, ER, CR, SECR and NFR

Route No. 10151³³ and route number 10150³⁴ created in the CMS were fixed mileage route and it was noticed in audit that route number 10151 was used as default for booking of Pilots and route number 10150 was used as default for booking of Guards. This resulted in charging of different mileage for pilots and guards. Orders/instructions in support of the above practice were not produced to audit. Payment to the crew of PKR lobby was made on the basis of mileage allowance generated by the CMS.

(Annexure - 26)

In reply (September 2015), RB stated that necessary instructions have been issued to zonal railways.

2.5.4 Generation of Mileage Allowance – Non-validation of/delay in sign on/off time, wrong configuration of allowances etc.

As per paragraph 914 (ii) of IR Establishment Manual, each railway shall identify such sections and circumstances which do not have the potential for enabling the running staff to earn adequate kilometrage within the stipulated duty hours. For these identified sections and circumstances, the running staff shall be paid at the rate of 120 kms. for the full stipulated duty hours and such section will be considered as ‘minimum guarantee section’. However, this rule was not properly followed/implemented. Further, system also did not validate crew sign on/off time which resulted in wrong generation of mileage allowances. Instances found in this regard are given below:

2.5.4.1 Same crew sign on/off time from same lobby – generation of irregular mileage allowance

- Over ER, Audit found during test check of CMS data as well CMS Mileage Reports that in seven transactions, where time and lobbies/locations of crew sign on and sign off were same viz. the crew duty hours were zero, no mileage allowance should have been computed by the system. However, a mileage of 120 kms. was allowed in each case by CMS as the routes were marked as Minimum Guarantee section.
- Over NR, in respect of seven cases, crew had signed on/off from same station/lobby and at the same time but CMS had computed mileage allowance in the range of 40 kms. to 248 kms even though six out of seven routes were not marked as Minimum Guarantee section. In one of the seven cases, the TA was prepared for zero mileage allowance but mileage of 120 kms. was computed by the CMS which was irregular.

(Annexure - 27)

³³ PKR-PKR-KSIK---/160

³⁴ PKR-PKR-PKRZ----/210

This implies that CMS lacks adequate controls to validate crew sign on/off time and mileage allowances generated by it.

In reply (September 2015), RB while endorsing remarks of CRIS that cases pertain to fixed mileage routes and no validation are proposed as there is no minimum run time, issued necessary instructions to zonal railways.

The remarks of CRIS are not acceptable as necessary validations are required to prevent charging of mileage allowance for zero duty hours.

2.5.4.2 Crew sign on/sign off at the same time from two different lobbies – generation of irregular mileage allowance

Over two ZRs³⁵, audit found, during test check of CMS data as well as CMS Mileage Reports, 732 instances/transactions where crew had signed on and signed off from two different lobbies/locations at the same time, though it was not feasible as the lobbies were physically apart from each other and in these cases, test check revealed that CMS has also allowed mileage allowance without validating sign on/off time.

Thus, lack of logical controls in CMS to validate sign on and sign off time from two physically apart lobbies for the same crew at the same time has resulted in irregular generation of mileage allowance.

In reply (September 2015), RB while endorsing remarks of CRIS that validation for duty hours are not proposed as there is no minimum run time, issued necessary instructions to zonal railways.

The remarks of CRIS are not acceptable as necessary validations are required to prevent wrong charging of mileage allowance for zero duty hours.

2.5.4.3 Wrong configuration of minimum guarantee/handicapped section

As per codal provision³⁶, each Railway shall identify such sections and circumstances which do not have the potential for enabling the running staff to earn adequate kilometrage within the stipulated duty hours. For these identified sections and circumstances, the running staff shall be paid at the rate of 120 kms. for the full stipulated duty hours.

- In Hubli division of SWR, six sections were identified as handicapped sections in August 2008 effective from April 2004. During May 2011, four sections were also identified as handicapped/minimum guarantee section effective from April 2011 up-to March 2012.

³⁵ NR=728 cases, ER=4

³⁶ Paragraph 914 (ii) of Indian Railways Establishment Manual

It was noticed in audit that no orders were issued by SWR to extend the validity of identified handicapped sections after March 2012. This resulted in irregular payment of kilometrage allowance of ₹ 13.40 lakh (approximately) for handicapped section during September 2014 to November 2014 by SWR.

(Annexure - 28 - Table-A & B)

- As per NR letter dated 21 October 2008, Narwana-Kurukshetra (NRW-KKDE) section has been defined as minimum guarantee section but has been marked in CMS as only one way on Route No. 1097 between NRW to KKDE and has not been marked as such on route No. 1760 between KKDE to NRW.
- Over ECoR, KDJR-NYG-PRNR-GADH³⁷ and KDJR section was defined as a minimum guarantee section. However, the same was not marked as such in CMS which resulted in computation of mileage allowance on the basis of actual kms. rather than computing of minimum guaranteed mileage allowance.

In reply (September 2015), RB stated that necessary instructions have been issued to zonal railways.

2.5.4.4 Wrong calculation of ghat allowance

As per extant orders³⁸, Lalkaun-Haldwani (LKU-HDW) and Haldwani-Kathgodam (HDW-KGM) sections over NER have been selected as special ghat sections. Ghat allowance for ghat section is to be calculated at twice of actual distance for LKU-HDW section and at thrice of actual distance for HDW-KGM section. As per CMS database, the section between LKU-HDW (having distance of 16.09 kms) has been defined as type-II ghat section under route number 890 and 1464 and mileage for type-II ghat section is computed by CMS at thrice the actual distance (two times of normal working plus actual length) instead of at twice of actual distance. Moreover, under route numbers 890 and 1464, the section between Haldi Road (HLDD) and Lalkaun (LKU) (having distance of 7.63 kms.) has been marked as type-II ghat section *viz.* the mileage for this section is also computed at thrice of actual distance. However, the section between HLDD and LKU is not a ghat section.

Hence, mileage computed under route number 890 and 1464 for HDW to LKU and HLDD to LKU was not computed as per extant orders and payment was made as per the mileage generated by the CMS.

In reply (September 2015), RB stated that necessary instructions have been issued to ZRs.

³⁷ See glossary

³⁸ DME/(O&F)/IZN letter no. Mechanical/539/3/4/ Part I dt. 1 June 2011

2.5.4.5 Computation/Payment of excess shunting mileage allowance due to late signing off

As per CRIS documentation on CMS, a Shunter is allowed a mileage of 15 kms. for a shunting duty of one hour (rounded off to 30 minutes). Shunters are generally booked for eight hours' duty in one shift or for 16 hours' duty in two shifts of eight hours. It was, however, observed in Audit that CMS has not been configured to highlight cases where the mileage allowance is for excessively high hours of duty, thereby denying an opportunity to the Railway Administration for taking corrective measures and the mileage allowance as calculated by CMS is being paid to the Shunters (except for the few cases where the Lobby staff was vigilant and manual intervention was made). In this regard, observations are as follows:

- Audit found during data analysis over NR & CR that in 1772 cases³⁹, the CMS allowed shunting mileage allowance @ 15 kilometers per hour for performing shunting duties for a period beyond 17 hours to 270 hours⁴⁰ which resulted in computation of shunting mileage allowance of 7,60,095 kms⁴¹, pertaining to duty exceeding a period of 17 hours. This occurred probably due to poor supervisory control over approving abnormal 'crew sign on'/sign off time'.
- Scrutiny of physical records at TKD lobby revealed instances where crew was paid shunting mileage allowance as computed by CMS. For example, a crew (ID TKD1456) booked for a duty of eight hours shift on 11 October 2014 was allowed shunting mileage allowance for a duty of 32 hours and against the entitlement of shunting mileage allowance for 120 kms. was paid shunting mileage allowance for 480 kms. A crew (ID TKD1441) deputed for 16 hours duty (two shifts of 8 hours) was paid for 32 hours' duty and against the entitlement of shunting mileage allowance for 240 kms. was paid shunting mileage allowance for 480 kms.
- At GZB lobby, crew booked for eight hours duty (one shift) or 16 hours duty (two shifts) were paid mileage for a duty period ranging from 32 hours to 61 hours and against the entitlement of 120 kms. or 240 kms. were paid shunting mileage allowance for 480 kms. to 915 kms. At GZB lobby, system allowed payment of mileage allowance for 1530 kms to a crew (ID GZB1527) for a shunting duty performed continuously from 1 October 2014 to 5 October 2014 (102 hours) even though the crew was absent from 1 October

³⁹ NR=1216 cases, CR=556 cases

⁴⁰ CR=17 hours to 264 hours, NR=17 hours to 270 hours

⁴¹ NR= 4,29,195 kms., CR=3,30,900 kms.

to 2 October 2014 which clearly gives rise to the suspicion that he was logged in by a proxy.

Excess payment of mileage allowance was due to the fact that the concerned crew had not timely signed off in CMS but the same was approved by the Supervisor and CMS also lacked adequate controls/provision to prevent delayed sign off as well as generation of abnormal shunting mileage allowance and the concerned crew members also did not point out excess charging of mileage allowance for payment.

- In 3488 cases, Shunters/crew performed shunting duties for 511 to 539 minutes (i.e. more than 8½ hours to less than nine hours) and were allowed mileage allowance by the system for nine hours, though as per Shunter Roster, Shunter is deputed for eight hours shift. Similarly, in 149 cases, Shunters /crew members were allowed shunting mileage allowance for duty performed for more than 16½ hours and less than 17 hours though as per the Roster, Shunters/crew members are booked for 16 hours (in two shifts cases). Thus, delay in signing off in 3637 cases led to computation of excess mileage allowance by 54,555 kms.
- Further, test check of physical records at GZB and TKD lobbies revealed instances where Shunters deputed for eight hours' duty of one shift or 16 hours' duty of two shifts were paid for nine hours or 17 hours' duty though their duty period of nine or 17 hours was not regularized. During test check of physical records at SSB lobby, Audit found that the CMS allowed excess computation of shunting mileage allowance but the concerned crew who was allowed mileage for a duty period of more than 8½ hours, pointed out the excess mileage for deduction of the same from his pay bill.
- Analysis of NR data also revealed that in 1911 cases, CMS computed shunting mileage allowance of 72495 kms. pertaining to shunting duty performed for a period beyond eight hour viz. for duty performed between nine hours to 15 hours which were not as per duty roster hours.
- Over NFR, it was noticed that CMS was not serving as a tool for controlling payment of mileage allowance as was evident from the results of test check of Mileage Summary Report for the period 1 October 2014 to 31 October 2014 which revealed that due to non-approval of TA by Supervisor within time, crew had to sign off manually and improper up-dation of CMS data of manual sign on & sign off by crew at non-CMS locations, resulted in computation of mileage in excess of 1395 kms to 3200 kms by CMS which required manual corrections.

In reply (September 2015), RB while endorsing CRIS remarks that validation can be introduced if parameters are defined by Railways, stated that necessary instructions have been issued to the zonal railways.

2.5.4.6 Time lag in data updation leading to inadmissible computation/payment of officiating mileage allowance

As per CRIS documentation, Senior Assistant Loco Pilot/Loco Pilot Shunters (SALP/LPS) are not entitled for officiating mileage allowance for performing shunting duties. A review of CMS data revealed that between 5 September and 5 December 2014, the CMS computed 7,681 kms. as officiating mileage allowance to SALP and LPS for performing shunting duties.

These kilometers were computed after the date of promotion as SALP/LPS. During test check of records at TKD and SSB lobbies of NR, it was noticed that such inadmissible payment of officiating mileage allowance was made as promotion dates of crew were not timely updated in CMS which led to charging of inadmissible officiating mileage allowance.

In reply (September 2015), RB stated that necessary instructions have been issued to the zonal railways.

2.5.5 Increase in percentage of non-programmed utilisation of crew to their programmed utilisation over the years

Efficient utilisation of crew means more deployment of crew in programmed activities as well as reduction in deployment of crew in non-programmed activities. An analysis of CMS's crew utilization data of 13 ZRs⁴² pertaining to April 2014 to November 2014 revealed that the percentage of total non-programmed hours (period utilized on leave, stationary duty, training, and other miscellaneous type of duties) to total programmed hours (i.e. period utilized on running duty and rest) was in the range of 5.68 percent (SR) to 19.28 percent (ECoR).

An year wise analysis of CMS's crew utilization data of these ZRs⁴³ pertaining to April 2011 to November 2014 revealed that the percentage of total non-programmed hours to total programmed hours indicated an increasing trend over ER, NWR, SECR, WR, WCR, CR, SER, NCR, SR and SWR whereas it indicated a decreasing trend over NR, ECoR and NFR. During April 2011 to November 2014, it increased from 1.75 per cent to 8.71 per cent over ER and from 13.52 per cent to 17.12 per cent over SECR. It decreased from 23.57 per cent to 19.28 per cent over ECoR and from 8.64 per cent to 7.73 per cent over NFR.

(Annexure - 29)

⁴² CR, ER, ECoR, NR, NFR, NWR, SER, SECR, SWR, WCR, WR, NCR & SR

⁴³ CR, ER, ECoR, NR, NFR, NWR, SER, SECR, SWR, WCR, WR, NCR & SR

Thus, the increasing trend of utilization of crew on non-programmed activities leads to the conclusion that due control is not being exercised to improve the deployment of crew in programmed activities.

In reply (September 2015), RB stated that necessary instructions have been issued to zonal railways.

2.5.6 Comparison of crew movement data *vis-a-vis* FOIS/CMS/COA train departure/arrival time

An analysis of data containing details of the crew sign-on/sign-off and FOIS/CMS/COA arrival/departure time was done over eight ZRs which indicated that system lacked adequate control to validate the data input pertaining to crew sign on/sign off time or the COA/CMS/FOIS train movement time was wrong.

Audit noticed instances where the crew signed on after FOIS train departure time, crew signed on abnormally early to FOIS train departure time, crew signed off before FOIS arrival time of the train, FOIS train departure time and crew's sign-on time was same, CMS train departure time was abnormally after train ordering time. Comparison of CMS data with COA data revealed instances where crew sign on time was not regular/within the specified limit. *(Appendix - XXII)*

(Annexure - 30)

Chapter 3 – Review of Application Controls

Audit Objective 2

To review the application controls to ensure that proper authorization, completeness, accuracy and validity of transactions, their maintenance and other types of data input were in place.

3.1 Multiple Traffic Advices (TAs) of same train – Non-validation of crew competency

Traffic Advice contains details for which a crew is to be booked like route number, station from, station to, loco number, traction, train ordering time, train number, crew required etc. and is used for booking a crew.

A review of the TAs pertaining to 5 September to 7 December 2014⁴⁴ created by different lobbies over different zones revealed that multiple TAs were created where route number, train ordering date & time, station from and to, service type and train number were same.

Multiple transactions of TAs having similar type of details, as mentioned above, were noticed in respect of three types of duties, viz. Road Learning⁴⁵ (11 ZRs⁴⁶), Working⁴⁷ (12 ZRs⁴⁸) and Spare⁴⁹ (12 ZRs⁵⁰). The number of records of TAs, having similar details as mentioned above, were 27262 for Road Learning type duty (with same number repeated up-to 96 times), 437389 for Working type duty (with same number being repeated up-to 52 times) and 45345 for Spare type duty (with same number repeated up-to 75 times). These figures did not include any cancelled TAs.

A comparison of 11 working type TAs, having similar details as mentioned above, of GZB lobby of NR with Mileage Reports/physical records revealed that Assistant Loco Pilot/Loco Pilot (ALP/LP)/(Train Drivers) were booked against all the 11 multiple TAs although they were not booked for the destination mentioned in the 10 TAs. This indicates that TAs with dummy details were in use for booking crew. Similarly, out of 21 working type TAs, having similar details as mentioned above, of TKD lobby of NR, 18 TAs were processed for booking ALP/LP (Train Drivers) and in all these 18 TAs, loco number and loco type were also same.

⁴⁴(including 14 TAs pertaining to future period from December 2015 to August 2024)

⁴⁵Road Learning is a type of duty where crew is booked for learning route /getting familiar with a specific route of a section.

⁴⁶ CR, NR, NWR, NFR, SR, SCR, SECR, SER, ER, WR

⁴⁷Working is a type of duty where a crew is booked for working/driving a train.

⁴⁸ CR, ECoR, NR, NWR, NFR, SR, SCR, SECR, SER, ER, WR

⁴⁹ Spare is a type of duty where a crew is booked for his movement from one station to another station.

⁵⁰ CR, ECoR, NR, NWR, NFR, SR, SCR, SECR, SER, ER, WR

Booking of loco pilots against multiple TAs between 11-18 times having same train ordering time, same loco number, same destination and same routes is not practicable and this has led to failure in validating crew competency for correct loco, actual route for which crew was booked. It also leads to the conclusion that preparation of TA with wrong details may be one of the reasons for bypassing the validation of crew competency for loco and route and this also resulted in populating the CMS with dummy data leading to generation of false information.

Thus, the above deficiencies indicate that the CMS failed to generate proper and correct Traffic Advices to ensure booking of competent crew. The system allowed populating dummy TA data leading to wastage of manpower and generation of wrong information, thereby compromising the efficiency of CMS operations. This also indicates that TAs are being prepared just because of provision in the system for booking crew and are not being prepared by taking their significance into consideration.

In reply, RB endorsed CRIS remarks that observations have been noted for remedial action.

(Annexure - 31)

3.2 Discrepancies in traffic advice data/Incomplete data

A review of TA data of a few coaching trains at various lobbies⁵¹ of NR, NFR & SER revealed that no uniformity as to train number, destination station, service type etc. was maintained while preparing TAs. Same train was being operated with TAs having different train number/names, destination, type of train/service, different ordering/departure time etc. On some days, a train operated as express train, was operated as passenger/freight train on other days. A few such examples are given in *Appendix XXIII*.

Thus, CMS lacks data validation controls and lack of uniformity/inconsistency in Traffic Advices leads to wrong generation of mileage allowances, populates CMS with wrong data leading to generation of wrong information.

3.3 Multiple acknowledgement of call

After booking a crew for duty, a call is served to the crew intimating him about his duty details and the call is acknowledged by the crew either by accepting or rejecting the same. A review of the call data

⁵¹Train Number 14095(DEE),12954(NZM), 14086 (SSB),12011,12029, 12226(DLI), 12455/12455 Exp (JHL),12428,14006(ANVR), 54412(MTC), 12057, 19326(GZB),54009, 74012 (ROK),12481, 13007 (Jind), 64002, 04032, 54026,04426(PNP),05817UP(APDJ), 15717UP(GHY), 15670(LMG), 05610(KIR), 55908(NTSK), 02503DN(NJP) and 05726DN (NCB), (18409, 18615, 18625 of SER)

pertaining to 11 ZRs⁵² for the period 5 September to 5 December 2014 revealed that 54852 calls made to crew of 11 ZRs were acknowledged between two to 38 times.

Acknowledging same call multiple times indicates that either the earlier acknowledgements of calls were wrongly entered in CMS or the crew did not turn up on time against earlier call, hence, went into non-run and he was again booked on the same TA.

(Annexure - 32)

3.4 Non-capturing of train number

As per review of 25425 Freight/Mail express/Passenger trains TAs of ten ZRs⁵³ it was noticed that TAs of these trains were prepared without capturing their train numbers. Name of five coaching trains over SECR was captured as “/”. Over SCR, 57 types of (each type containing several records) single digit train numbers were fed into the database.

Non-capturing of train number indicates inadequate validation controls to ensure completeness of train data input and this leads to failure in identification of train in which a crew was booked.

3.5 Non-capturing of traction details

While preparing Traffic Advice, details of the traction of the loco i.e. whether the loco is of diesel power or of electric power is captured in the system. However, out of 2091419 transactions pertaining to 14 ZRs⁵⁴ containing details of TAs and booking of crew, in respect of 22531 transactions, traction of the loco for which a crew was booked could not be ascertained as Traction related information was not captured. In respect of 3215 transactions, irrelevant values like Z, NG, Auto etc. were recorded in the Traction field.

Thus, complete and exact details of loco/train could not be ascertained in respect of these trains and this also raises doubt as to whether the crew competency for operating the train was validated.

In reply (September 2015), RB while endorsing CRIS remarks that in case of Guards, no traction is required, stated that necessary instructions have been issued to the zonal railways.

However, audit observations contain cases where traction details of crew members other than Guards are missing. Hence, remedial action in the matter is required.

(Annexure - 33)

⁵² NR, SECR, SCR, CR, ER, ECoR, NFR, WCR, WR, SR, NCR

⁵³ NR=286, SECR=181, ER=10514, WR=9796, CR=1030, NFR=11, NWR=2921, SER=641, SWR=20, WCR=25

⁵⁴ ER, NWR, NR, CR, ECR, ECoR, NFR, SECR, SER, SCR, SWR, WR, SR, NCR

3.6 Non-updation of training, leave and security records of crew in CMS

During audit of records of CMS at selected lobbies, no formal procedure was found to be established for ensuring updating of data pertaining to training, leave/absence etc. in CMS. During test check of records of selected lobbies over different ZRs, differences were found between manual records and CMS records as is evident from the following examples:

- i. Security grading details of crew of NFR (APDJ lobby) pertaining to the period 2005 to 2012, NR (SSB Lobby and Electric lobbies of DLI Division) were different in CMS from those recorded in Loco Inspectors' Hand Book/Manual Records. Manually maintained Periodical Medical Examination/Refresher Training Courses records at SSE/Loco offices of NFR, SER, ECoR, WR selected for Audit, were not found updated in the CMS database on 'real time' basis. Over NWR lobbies, dates of LAP shown in CMS were not matching with leave account. Leave details were found not updated in SWR and NR. Over NWR, in CMS, reason for non-run was wrongly shown as 'TLC' i.e. Traction Loco Controller meant for Electrical Traction which does not exist in NWR.

Delay in data updating leads to wrong calculation of allowances, depicting wrong information and reflects the deficiencies in internal control, monitoring and rectification mechanism.

In reply (September 2015), RB stated that necessary instructions have been issued to the zonal railways.

3.7 Non-capturing of correct data for cancellation of TA

System allows cancellation of TAs necessitated due to various reasons. However, improper/meaningless reasons for cancellation of TA were captured. As per the TA Cancellation Report of GZB, Jind, Panipat, NZM, MTC lobbies of NR, in majority of the cases of TA cancellation/put-back, proper reasons were not recorded as irrelevant entries like single digit alphabet/numerical K, E, Y etc. were used which did not convey any meaningful information.

Over SECR, SER & SCR, in 372⁵⁵ cases reasons found for TA cancellation did not convey any meaningful information. The data analysis over ECoR and NCR also revealed that in 3230 cases of TA cancellation⁵⁶, reasons for cancellation of TA were not available.

In reply (September 2015), RB stated that necessary instructions have been issued to the zonal railways.

⁵⁵ SECR=1, SER=24, SCR=347

⁵⁶ ECoR=3219, NCR=11

3.8 Improper capturing of reasons for changes in sign on/off time of crew

There is a provision in the CMS to modify values in crew sign on/off field and Rest Given field and the reasons for modifications are also recorded in the database. A review of transactions data of 9,41,224 records relating to modification done in the above fields by 10 ZRs⁵⁷ between November 2013 to December 2014 pertaining to various duration revealed that in all the cases, remarks recorded for changes in the Crew Sign on field were 'Sign On Time Changed By User' which did not convey actual reasons for modification. In respect of changes made in Crew Sign off values and Rest given field values, remarks column in almost all/majority of the cases were either blank or reasons recorded irrelevant entries like,/, A, X, '+' etc. which did not convey any meaningful information.

Lack of adequate controls to enforce capturing of proper remarks/reasons for alteration in date and time field deprived management of becoming aware of actual reasons for altering critical data for proper monitoring and for taking remedial action in the matter.

In reply (September 2015), RB stated that necessary instructions have been issued to the zonal railways.

3.9 Review of 'Lobby Utilization Report' data

CMS generates 'Lobby Utilization Report' containing breakup of the hours utilized by crew on different types of duties like running duties, rest, leave, training, stationery duties etc. during a particular period of time.

Analysis of data pertaining to utilization of hours by the crew for different periods was done over NR, ER, SR, NCR and SECR for two periods⁵⁸ in respect of 13880⁵⁹ and 13905⁶⁰ crew respectively. It was noticed that in the first period each crew had an available time of 744 hours whereas in the second period each crew had an available time of 720 hours.

⁵⁷NWR=15824, ECR=16628, CR=93230, NR=106399, SECR=171699, ER=159184, NFR=11841, SCR=333155, SER=20509, SWR=13665

⁵⁸NR=1st period = 15-10-2014 to 14-11-2014, 2nd period = 08-09-2014 to 07-10-2014
ER=1st Period = 06-10-2014 to 05-11-2014, 2nd period = 06-11-2014 to 05-12-2014
SECR=1st period= 11-10-2014 to 10-11-2014, 2nd period = 11-09-2014 to 10-10-2014
SR = 1st period =01-10-2014 to 31-10-2014 2nd period = 01-09-2014 to 30-09-2014
NCR=1st Period = 05-10-2014 to 04-11-2014 2nd Period = 05-09-2014 to 04-09-2014

⁵⁹NR=3757, ER=811, SECR=3921, SR=1859, NCR=3532 (Total=13880)

⁶⁰NR=3731, ER=820 and SECR=3893, SR=1852, NCR=3609 (Total=13905)

Period	No. of hours Available	No. of Crew	Observations
I st Period	744	196	Details of utilization in the range of 745-863 hours
		54	Depicted details of utilization in the range of 616-736 hours
II nd Period	720	800	Details of utilization in the range of 723-976 hours
		31	Details utilization in the range of 544-719 hours.

Depiction of excess utilization was due to the fact that some of the sign on/off (crew movement) transactions were included in the report/data multiple times and depiction of less utilization was due to the fact that complete movements of crew were not captured.

Further, as per CMS Lobby Utilization Reports data of NR, ER, SECR, SR and NCR for the first period, 1237 crew and for the second period 1205 crew of NR, ER, SECR and NCR did not perform any running duties and were on rest for the whole period. However, as per the test check of records at TKD lobby of NR, it was informed to Audit (May 2015) that majority of the crew members who had zero (0) duty hours and 744/720 rest hours were either performing duties at location/lobbies other than TKD or were on long leave/absent but Lobby Utilization Report showed them under Rest.

In the absence of reliable Lobby Utilization Report, management was denied an opportunity to control and deploy crew in the most productive manner.

(Annexure - 34)

3.10 Inconsistency in output reports

A review of reports pertaining to 'Crew Due for Periodical Rest', 'Crew Training History', 'Crew Training Particular', 'Breach of Rest Details' and 'Crew Mileage Summary' revealed inconsistencies.

As per column 'No PR in Last seven days' of Crew Due for Periodical Rest' report, the crew had not taken any rest during the last seven days from the date of report but as per 'Last PR Hours' column of the same report, the crew had taken the rest.

In case of 'Crew Training History' & 'Crew Training Particular', both the reports generated at the same time indicated different due dates of training for same crew.

In case of 'Breach of Rest Details' report and 'Crew Mileage Summary Report', both these reports depicted different period of breach of rest.(*Appendix - XXIV*).

The above deficiencies indicate that the CMS failed to generate correct MIS which could lead to wrong decision making by the Railway Administration. Thus, correct generation of various MIS reports should be ensured to facilitate Railway Administration in proper monitoring and decision making process.

3.11 Non-usage/Incomplete usage of 'Abnormality Module'

The CMS kiosks used for sign on and sign off purpose has feature/facility to enter the abnormalities noticed by the crew at the time of sign off. Apart from that Lobby officials can also enter abnormality details in CMS. When the abnormality is entered, the system immediately sends SMSs to all the concerned users configured in the system about the abnormality noticed. The status of the abnormality remains as Pending in CMS. The operator has the option of setting the status as Complete by selecting the option YS in CMS and also by giving the reasons/ remarks about the action taken in the case.

Over CR, NR, SER, SCR, SWR, WR it was noticed that crew were not actively using this facility and instead they recorded the abnormalities in the manual register kept in the lobby which was then communicated by the Lobby officials to Control office. A test check of records at DLI, GZB and PNP lobbies of NR revealed that the abnormality communicated by crew was also not regularly entered / updated in the CMS. Instead, Divisional Control office at DLI daily collected Abnormality Position from different lobbies. Over SCR, a separate Access based programme viz. 'Centralised Control Statistics' was in use for the purpose.

Over CR, the lobby which had reported the abnormality did not get the feedback about the action taken or when the reported fault was set right. Hence, in most of the cases, the status of most of the abnormalities entered in CMS remained pending. Moreover, setting the status of an abnormality as complete is a supervisory function and needs to be performed by a Supervisor. Since the outsourced data entry operators have also been given supervisory privileges, the security aspect of this important function is compromised thereby safe operations may be adversely affected.

It was further noticed that Loco Inspectors conduct footplate inspections and may notice abnormalities. However, CMS had no provision to enter abnormalities noticed by Loco Inspectors (CR, NR, SECR).

3.12 Non-usage of Link

There is a provision for inclusion of crew links⁶¹ in the system and book passenger and mail/express crews. However, this module was not found to be actively in use as the crew links had not been uploaded in the system of almost all the lobbies test checked over 12 ZRs⁶².

Non-usage of links results in manual preparation of Traffic Advices in CMS and defeats the purpose of developing Link module.

⁶¹Link are created for Mail Express/Passenger/Rajdhani/High speed trains drivers, for daily/weekly, multi-weekly days, contains details about train arrival/departure time, crew reported time for duty, periodical/long rest and are used for booking crew by assigning them to a specific link.

⁶² CR, ECR, NCR, NFR, NER, SECR, SR, SCR, SER, SWR, WCR, WR

Chapter 4- Review of IT Security

Audit Objective 3

To review the IT security mechanism to ensure that it was capable of reasonably protecting all business critical information and IT assets from loss, damage or abuse.

To review the Disaster Recovery Plan (DRP) /Business Continuity Plan (BCP) to ensure the continuity of the organization's business in the event of unforeseen events.

Crew Management System is a part of the Freight Operations Information System (FOIS) having interface with other modules/applications of FOIS and covers important activities such as assignment and booking of crew for various trains, validation of competency of crew for train operations and captures critical data which is very important for safe train operations. Apart from that, CMS also manages data pertaining to various allowances of crew. As such it is very important to adopt adequate preventive, detective and corrective measures to protect CMS for its confidentiality, integrity, availability and to ensure safe, smooth, timely and continued train operations.

Railway Board formulated its Baseline IT Security Policy in April/May 2008 within which subsidiary procedures and instructions were to be drawn by CRIS/zonal railways/individual units. The Baseline IT Security Policy addresses different aspects of IT Security including environment and location security, equipment security, physical access control, data access right, user identification and privilege management, password management, Business Continuity Plan, data backup, application development and maintenance security, protection against virus and malicious software, internet/email security, software and patch management etc.

Audit has noticed that subsequent to the RB's Baseline Security Policy, no IT Security Policy or subsidiary procedures and instructions relevant to CMS have been drawn over 13 ZRs⁶³. In reply, Railway Administration of NR, ER, SECR and SER reported that the matter pertains to CRIS/ CAO (FOIS) office.

However, Audit of CMS application security was conducted broadly keeping in view the IR's Baseline IT Security Policy/CRIS Information Security Policy. Audit observations in this regard are as under:

4.1 Physical Access controls

Physical risks to the system include physical damage, theft and disclosure/copying of information. Physical controls of IT systems ensure prevention of unauthorized access to IT system or their malfunctioning.

⁶³SR, CR, NWR, NR, ER, NER, SWR, NCR, SECR, WCR, SCR, WR and SER.

As per IR's Baseline IT Security Policy, computer rooms should be restricted area, only authorized persons should be allowed entry into the premises and suitable access control system should be put in place. All visitors to the computer rooms should be monitored all times by an authorized member of the Railway staff.

During the visit to various lobbies of 12 ZRs⁶⁴, it was noticed that adequate measures⁶⁵ were not adopted to prevent and detect the entry of unauthorized persons to lobbies and to protect the IT Assets from theft/damage. Over different zones, detective security measures like CCTV cameras were either not installed or inadequate number of CCTVs were installed as details given in *Appendix XXV*.

In reply (September 2015), RB stated that necessary instructions have been issued to the zonal railways.

CMS Users: CMS is used at different levels by different types of users having different privileges. It is mainly used by System Administrator, Database Administrator, Database user and Software (Application) Access users. The Software Application Access users include Super user for creating Supervisor user for lobby, Supervisor user (Loco/Traffic) for creating Train Clerk (TNC) user for lobby and for approving sign on/off, TNC user for booking of crew on various Traffic Advices and Crew Console user for Kiosk which enables every Crew Console user to access CMS through Kiosk for sign on/off, viewing his personal details etc.

As per Baseline IT Security Policy of IR, every user ID should uniquely identify one user. Group or shared user ID should not be created unless permitted explicitly and approved by the Department IT Security Manager. Each password should have a minimum length, restricted words/format and a validity period among other restrictions. All information system privileges should be revoked at a time a member is transferred or ceases to serve railway. Moreover, data access rights should be granted on need to know basis. In this regard, audit observations are as under:

4.2 Logical Access control – password policy

A system in the form of software control aimed at protecting computer resources (data, programs etc.) against unauthorized access is classified as logical access control. In this regard, following issues were noticed in audit:

⁶⁴ WR, SWR, ER, SR, SER, NWR, SCR, ECoR, NCR, NER, ECR & WCR

⁶⁵ Like Electronic Door Lock, Bio-metrics Door Lock, Swipe Card, Security Guard etc.

Password Policy

As per CRIS's Information Security (Password) Policy, password length should be minimum six characters for user account and 10 characters for Administrator account and should be a combination of upper and lower case characters, digits and permitted special characters.

- Test check revealed that CMS neither ensured a password consisting of lower/upper case characters, digits and special character nor ensured minimum 10 characters password for System Administrator/Database user and accepted minimum six character simple password such as '123456'. At application level, CMS allowed single character user ID as well as password to enable crew to login/access the system, without forcing change of password at first login and periodical change of password.
- Analysis of data pertaining to different types of users revealed as under:

User Type	Details
Crew Console User (Drivers/Guards)	Between 11.91 <i>per cent</i> and 100 <i>percent users</i> of all ZRs were using same password which, though in encrypted form, was the default password.
Loco Inspector/Senior Loco Inspector/Chief Loco Inspector	Between 74.01 <i>per cent</i> (SEC) and 98.53 <i>per cent</i> (ER) users of all ZRs were using same password.
CMS Users (Supervisor/TNC)	Between 36.68 <i>per cent</i> and 87.82 <i>per cent</i> users over all ZRs were using same password.

In view of the fact that user ID is visible to all and password can also be easily guessed, possibility of unauthorised access/login by proxy users cannot be ruled out as is further evident from the facts mentioned under paragraph number 2.5.4.5 in the report that a crew was found logged in during his absence.

Thus, the basic security measures, prescribed in the IR's Baseline IT Security Policy/CRIS Information Security Policy, were not adopted to ensure security and safety of CMS resources.

In reply (September 2015), RB admitted audit observations for remedial action.

(Annexure – 35, 36, 37)

4.3 Poor User Profile Management

Administrative/supervisory privileges were assigned to dummy users and privileges assigned were not commensurate with the requirement of user's designation, supervisory privileges were compromised and this could lead to loss of data integrity/misuse of system and wrong booking of crew. CMS users were created in obscure/lobby names and outsourced staff was not given separate user ID. This may lead to failure in identifying the actual person who populated the data, failure in fixing responsibility for wrong CMS operations. Audit observations/Instances of irregularities noticed in this regard are as under:

- **Irregular privileges to outsourced staff:** Over SR, data feeding in CMS at crew booking lobbies⁶⁶ was outsourced through a contractual agency but no separate user IDs and passwords were allotted to outsourced staff and common user id and password was shared by every CMS user in a lobby.
- Over SCR, in 1,16,383 cases, the person who booked the crew also accorded supervisory approval which indicated that in most of the cases the outsourced staff had granted supervisory approval which was in violation of the prescribed procedure and, therefore, irregular.
- Over ER, all the staff including outsourced staff of lobbies test checked used common user-id and password.
- **Irregular privileges to railway CMS User:** During data analysis, audit noticed over different zones that Administrative/Supervisory privileges were assigned to non-existent/dummy railway users or the privileges assigned were not commensurate with user's designation. Users were found created in obscure/lobby name which did not disclose identify of the actual user. (*Appendix - XXVI*)

(*Annexure - 38*)

- **Different roles/functions performed by CMS users, using Supervisory ID**

As per CRIS's CMS documentation, different roles have been provided for Train Clerk and Supervisor and the same are supposed to be performed by actual users.

- As per CMS User Manual, Supervisory function of approving sign on/off activity of crew is to be performed by crew Supervisor. An analysis of data pertaining to crew calling, booking and approving their sign on revealed that over 11 ZRs⁶⁷, out of 2071319 cases, in 669393

⁶⁶ *Tambaram, Chennai Egmore, Chennai Central, Tiruvottiyur, Arakkonam and Jolarpettai*

⁶⁷ *ER, NR, NWR, WR, NFR, CR, SCR, SER, SECR, SR, NCR*

cases, User IDs of Calling Clerk, Booking Clerk and Supervisor were the same.

(Annexure - 39)

- During lobby visits of Delhi division of NR, it was noticed that unified⁶⁸ user IDs were created for performing CMS operations and at majority of the lobbies, Assistant Loco Pilots/Loco Pilot Shunters (ALP/LPS) were using unified⁶⁹ user ID and password of their Crew Controller/Supervisor for crew booking and approving their sign on/sign off. Similar position was also noticed over SR, SWR and other zonal railways.

Thus, non-performance of Supervisory functions by actual user could be affecting the operations of CMS as brought out under paragraph numbers 2.5.4.5, 3.1 etc. and thereby security of the system was also compromised which may expose the train operations to risk.

- **Creation of multiple user IDs (multiple profiles) and non-deactivation of CMS Application users account**

A analysis of the CMS users data as well as scrutiny of CMS operations/records at lobbies revealed that users had multiple IDs, users created were in excess of the requirement, ex-officials were active as CMS user as is evident from the details given in *Appendix-XXVII*.

Thus, database of users has not been timely updated and can be misused by using IDs of ex-officials.

4.4 Non-monitoring of activities of Database Administrator (DBA)/Lack of audit trail

CMS development and maintenance functions are performed by CRIS CMS group at New Delhi which includes, among other functions, programming the application, testing of development/modification of software, managing database/updating database, managing users etc.

As per the information made available to Audit, seven users have DBA privileges. Further, 40 CRIS users had Administrative privileges at application level and one of them had Administrative privileges with multiple ID. Users having DBA privileges can access the CMS tables and effect modification in the database from backend without any monitoring of their activities as neither any logs/audit trail for monitoring activities of DBA were maintained nor other measures like restricting the access to single person were adopted to avoid any unauthorized and undetected changes in the database.

⁶⁸ A user having privileges of Supervisory functions and Train Clerk functions

⁶⁹ A user having the privilege of Supervisor and Train Clerk (TNC)

Absence of requisite logs/audit trail or other corrective measures (like restricted access) would result in failure to monitor/track unauthorized activities of users having Administrative privileges.

In reply (September 2015), RB endorsed CRIS remarks that audit observations have been noted for necessary action.

4.5 Non-installation/Updation of Antivirus and Operating System Patches

As per CRIS's IS Policy, System Administrator of respective groups/Users should ensure that appropriate anti-virus software⁷⁰ and latest Operating System (OS) patches⁷¹ are installed in server and other component managed by them and are timely updated. Moreover, as per IR's Baseline IT Security Policy, Antivirus should always be enabled and regularly updated on personal computer and computers connected with internal network via remote access channels.

- A review of the CMS on 2nd March 2015 revealed that Windows OS based server did not have updated antivirus software (anti-virus last updated on 24th February 2015).
- Patches on servers having Linux/AIX OS were last updated/installed on 27 January 2012.
- Thin clients/Windows based PCs were in use over different zones for CMS operations. Over SR, the version of antivirus software used (Quick Heal Anti-Virus Pro 2014) in the selected Kiosks was outdated and not renewed since 4th May 2014. Over SCR, anti-virus software was in use in the CMS machines of Hyderabad (HYB) lobby but not in the CMS machines of Secunderabad (SC) lobby. At Jind lobby of NR, PCs in use for booking had trial version of anti-virus.
- Anti-virus software was not installed/updated in the CMS machines of lobbies over CR, ER, ECoR, NCR, NER, SER, NWR, SWR and ECR selected for Audit.

Thus, lack of updated antivirus software/updated software patches can be exploited and lead to disruption of smooth CMS operations.

4.6 Deficiencies in Business Continuity Plan/Disaster Recovery Plan (BCP/DRP)

The objective of producing and maintaining a BCP/DRP is to ensure the integrity of the organization's IT assets and to reduce the risks

⁷⁰ *Anti-virus or antivirus software is computer software used to prevent, detect and remove malicious software.*

⁷¹ *A patch is a piece of software designed to update a computer program or its supporting data, to fix problem or improving the performance of the system. This also includes fixing security vulnerabilities.*

arising from unexpected disruption of the critical systems and to have continuity in business activities.

CMS system has a centralised Computer Data Centre at New Delhi which is being managed by CRIS since inception of the system from 2007-08. CRIS started the process of having a BCP/DRP in June 2012 for ensuring uninterrupted operations of CMS and till the end of January 2015, the work of implementation of BCP/DRP was still under process.

At zonal/divisional/lobby level, all ZRs did not have a structured and documented BCP/DRP. Route and media diversity/alternative communication channels for ensuring 24x7 connectivity were not available at lobbies of different zones. Connectivity/link failure, slow speed of network between central server and CMS client machines were the main reasons for disruption of continuous CMS operations over lobbies of different zones.

Arrangements for alternative power supply were not adequate at a number of lobbies. CMS equipments/devices were not covered under AMC at majority of the lobbies.

Working spare equipment/devices were not available for immediate replacement of defective equipment at different lobbies.

Fire Extinguishers had outlived their shelf life/were not installed and Smoke Detectors/Fire Alarm Systems were not installed. (*Appendix - XXVIII*)

In reply (September 2015), RB endorsed CRIS remarks that their Disaster Recovery setup at local site (Data Centre/production environment) has been commissioned.

The reply of RB is not acceptable because only phase-I of the CRIS DR Plan has been commissioned at local site (viz. Data Centre/Production environment) and phase-II of the DR plan for having a DR site at remote location has not been implemented. As the local DR setup (as well as Data Centre/Production environment setup) is prone to a number of risks which may not achieve the objective of having a DR site for continued CMS operations on 24x7 basis, the implementation of phase-II of DR Plan needs to be expedited for having a DR setup at remote location.

Moreover, the need of providing adequate infrastructure and adopting corrective and preventive measures at different zones has not been addressed which has either resulted in or could result in disruption of continuous CMS services.

4.7 Non/Irregular Maintenance of CMS data backup

As per CRIS IS Policy, all projects are required to maintain remote/offsite back up of data for ensuring continuous operations of various railway projects. CRIS's CMS group, which is maintaining centralized database of CMS, did not have any formal Documented Backup Policy addressing issues like identification of criticality of the data/information, procedures for backing up data, verification of backed up data for ensuring its integrity and timely recovery, security of the onsite/offsite data backup, period for maintenance of backed up data etc.

As per the duty list defined for various CMS group members, daily back up and weekly backup of data was to be maintained by CRIS. As per audit review of Backup process being followed by CRIS in January 2015, daily backup was not being taken up. CRIS was also not maintaining any remote site backup. Backup of CMS was stated to be tested randomly but due to lack of records/logs as to when the testing was done, this aspect could not be verified.

Thus, lack of any proper Data backup procedures in the CMS system entails the risk of jeopardizing the operation of CMS in the wake of emergent situations.

In reply (September 2015), RB endorsed CRIS remarks that remote site backup will be maintained.

Chapter 5 – Review of Contracting Issues, IT Operations, Project Management/Monitoring

Audit Objective 4

To review the contracting issues, IT operations and project management/monitoring to ensure that various contracts, IT operations, project management and monitoring aspects were adequately addressed.

5.1 Incomplete Project Implementation

CMS project was sanctioned for implementation in phases. In the first two phases, 302 crew lobbies and in the final phase, 445 crew lobbies/location including training centers and control offices were sanctioned for commissioning of CMS application, on the basis of minimum average of 36 sign on/off (per day).

Target date for implementation of CMS Project under Phase-I was fixed by RB as 7th March, 2007. Further as per railway budget speech of MR for the year 2007-08, all modules of FOIS including Rolling Stock Maintenance and Examination, Revenue Apportionment, Crew Management, Control Charting, COIS etc. were to be integrated and implemented in a time bound manner for completion by 2010.

Though a considerable time has already elapsed, even the work of development and implementation of the Crew Management System could not be completed as is indicated below:

- **Non-implementation of bio-metric system**

Biometric system was not implemented in ER, ECR, NCR, NER, SER, SECR, NFR, SCR, WCR and SWR. During test check of selected lobbies, it was noticed that Bio-metric system integrated with kiosk was installed at three lobbies of NR, two lobbies of CR, one lobby of SR and at all the selected lobbies of NWR, ECoR and WR.

Lack of Biometric system resulted in manual verification of crew which is prone to booking of crew through proxy.

In reply (September 2015), RB stated that Bio-metric module could not be implemented earlier due to network issues which have now been resolved and the system is being implemented at new lobbies. However, it cannot be implemented at already commissioned lobbies with non-compliant thin client as it requires upgraded client for local storage of thumb/finger prints.

The reply of RB contradicts itself as on one hand RB has stated that bio-metric system could not be implemented earlier due to network issues and on the other hand they have now stated that it cannot be

implemented at already commissioned lobbies due to non-compliant thin client.

- **Non-implementation of suburban module**

Suburban Module is required in CMS to capture 100 *per cent* movement of running staff tackling the EMU trains running in ER, SER, SR, WR, CR and metropolitan cities. Implementation of the module has not been completed, which in turn defeated the declared objective of the system.

In reply (September 2015), RB endorsed CRIS remarks that the module has been implemented but its usage depends on Railways. However, Audit has noted that the module is not in use.

- **Non/Incomplete integration of CMS with other Information systems**

As per MOU with CRIS signed in March 2008, CMS was to be interfaced through a message broker type of application to exchange information between Crew Management System and Freight Operations Information System (FOIS) and Crew Management System and Control Office Application/Integrated Coaching Management Systems (COA/ICMS). Further, In July 2014, RB had instructed all the ZRs to transfer the mileage bills to Pay Roll system (PRIME)⁷² in electronic form only by 31 July 2014.

Audit review revealed that CMS was only partially integrated with FOIS as well as COA/ICMS. Integration between FOIS and CMS was not fully successful as train arrival/departure data of FOIS was not found updated in CMS in respect of all trains. Further, integration with COA and ICMS was incomplete/partial as coaching trains' arrival/departure time was not found updated in CMS. Similarly, integration of CMS with PRIME could not be found in all the ZRs.

Incomplete integration of CMS with FOIS, COA and ICMS has resulted in generation of incomplete reports of Pre Arrival Detention (PAD) and Pre-Departure Detention (PDD) leading to manual maintenance of PAD/PDD records and has also affected the management of crew movement monitoring for continuous duties beyond the period of 10 hours as reports did not depict the requisite details of all crew pertaining to continuous running duties on wheels.

In reply (September 2015), RB endorsed CRIS remarks that integration of CMS with other application was partial earlier and will now be fully implemented after sanction of integration. Regarding PRIME, it was stated by CRIS that a standard facility for data exchange has been made available but its usage depends on Railways. However, Audit has

⁷² *Pay Roll and Related Integrated Module*

noted that the CMS data is manually entered in PRIME application over all ZRs.

- **Non-observance of RB directives**

As per RB's directives, Electric and Diesel Crew and Guards lobbies were to be at one place in the interest of efficiency, economy and ease of operations and there were not to be multiple crew lobbies at the same location. Review of records revealed that 18 stations/locations⁷³ over IRs have more than one lobby.

The above indicates that proper roadmap could not be drawn up by Railway Administration for the complete rollout of CMS as per the target fixed. RB's orders to integrate lobbies were not fully implemented. The process of integrating lobbies should be expedited to achieve the benefits of economy, efficiency and ease of operations.

5.2 Poor planning for implementation

As per CMS project papers, benefits of computerization of CMS can be fully realized on computerizing all crew-booking lobbies over IR and linking them to each other over a data-network. During the course of test check of project papers as well as lobby visits, it was noticed that all the lobbies in operation over IRs were not covered under CMS Network. Details are given as under:

- Over ER it was found that in the first phase 17 lobbies were sanctioned for implementation of CMS against a proposal for 21 lobbies. Again in the second phase RB sanctioned 17 lobbies for implementation of CMS. But 16 lobbies, which were sanctioned in first phase, were also included in the sanctioned list of lobbies to be implemented under second phase. The left out 4 lobbies under first phase could not find place in the list of second phase.
- Over NR, PWL Lobby, selected for CMS under first phase, had work pertaining to booking of crew on EMU trains but the module for booking of crew on EMU train was not developed/implemented. PWL lobby also could not be commissioned due to non-availability of connectivity/electrical equipment. Hence, Terminal Support System provided to PWL lobby had to be shifted to Anand Vihar lobby. However, PWL lobby was made operational in August 2014 and crew booking was being done through preparation of individual TA.
- Over SWR, Castlerock lobby has been commissioned for Drivers only and is yet to be commissioned for Guards.

⁷³ LNL, CSTM, PNVL, IGP, PUNE (CR), SC, BZA (SCR), HWH (ER), LKO, MB, NDLS, GZB, LDH (NR), BSB (NER), VSKP (ECOR), ALD (NCR), MGS (ECR), NGP (SECR)

The facts stated above revealed that locations were selected for implementation of CMS application without considering the feasibility aspect, which resulted in sanction of locations non-feasible to operate. This has also resulted in idling of valuable IT resources.

5.3 Non-implementation of project within target date

RB sanctioned ₹ 80 crore (approx.) during the period from 2005-06 to 2013-14 for implementation of CMS application in 747 locations in three phases⁷⁴. As on 31 March 2015, 372 lobbies⁷⁵ were commissioned i.e. only 49.8 *per cent* of the target has been achieved during last nine years. Such a prolonged period of implementation of a project in highly developing technology era has hampered the interest of the administration. Reasons for non/delayed implementation of CMS over different zones are given in *Appendix – XXIX*.

Thus, Railway Administration's failure to prepare the site in time delayed the implementation of the project which also resulted in failure to avail the warranty of the TSS equipment supplied but not installed. Delay in implementing CMS deprived the Railways of benefits of computerization of CMS. Hence, all out efforts need to be made to expedite the implementation of CMS at all lobbies.

5.4 Lack of trained personnel to operate the terminals

CMS is a potentially powerful MIS tool in the hands of Administration for optimum utilization of running staff. Various MIS reports generated through the system are effective only when the database is up-to-date i.e. all the data is fed timely and accurately into the system. As the CMS work is 24X7 in nature, the data entry work is also manpower intensive. Trained and skilled manpower is required for successful and smooth running of CMS.

As per Project Report on CMS, staff per lobby, called CORE team, shall be trained at CRIS in use of the CMS software. This CORE team shall be responsible for implementation of the software in Railways. They shall also act as trainers for imparting further software training at Railways. In this regard, audit observations are as under:

Zone	Status of Trained personnel
ER	At six locations, a few trained personnel of Core Implementation Group were working in the system.
CR	In Pune division, one Core Implementer was trained by CRIS.
NWR	At four lobbies of Jaipur division, four out of 37 operators

⁷⁴ Phase-I-153 locations, Phase-II-149 locations, Final(Third)-Phase-Stage-I - 220 locations and Stage-II -225 locations

⁷⁵ Lobbies include two training locations and one CMS location at CRIS/NDLS Headquarters

	were not trained.
SER	Trained personnel were not available for working system at KGP, ADL and NMP lobbies. At SRC, only one trained personnel was available. Outsourced personnel of KGP and SRC lobbies had not been provided any official training.
SECR	Outsourced operators were not given training.
SWR	Out of five trained operators, two crew members had returned to their running duties, one had been transferred to NCMS location and remaining two had been transferred elsewhere.
WR	At seven lobbies test checked in Audit, trained staff was not available at three lobbies (Sabarmati, Palanpur and Gandhidham).
ECR	Operators were not trained properly on the functionality of the system.

Most of the operators were working in the locations without training in 12 ZRs⁷⁶.

- There is no arrangement for imparting training to new entrants in the locations test checked. CMS operators at lobbies learnt their job from ex-colleagues but were not imparted any formal training. Moreover, users were ignorant about manual/documentation to operate CMS. At ASN, CMS lobby of ER, booking of guards was being done manually mainly due to ignorance of the operators about CMS working in the lobbies. Further, non-utilization of some of the CMS features and errors in the generation of TA/CMS operations, as highlighted under chapter 3 of this report, indicates that CMS operators were not trained properly. (NR, ER, NCR, CR, WCR)
- As per Vision Document Version 1.1 of June 2006 of CMS, Train Clerks (TNC) were to do the activity of crew booking, call serving etc. However it was noticed that there was no Joint Procedure Order (JPO) issued in CR for assignment of CMS data entry work and other related work.

5.5 Non-usage of CMS

It was observed in audit that operations of all the crew were not being covered under CMS, resulting in non-monitoring and non-management of crew through CMS.

Guards were manually signing on/off their duties. Bio-data of diesel crew was not captured in CMS, even after five years of commissioning of MAS lobby. System was lying inoperative/not-in use due to non-availability of CMS operator and defective system. Over Mumbai

⁷⁶ER, SER, ECR, SCR, NER, NFR, NCR, CR, WR, SECR, NWR and SWR

division, due to non-availability of Slate system, CMS was not in use. (*Appendix - XXX*)

5.6 Manual reporting of various types of information by different lobbies to control office

- Over NR, it was noticed that Divisional office/Control office at Delhi division was collecting various types of information from different lobbies though either the same information was already available in CMS or could be obtained from CMS. Delhi Divisional office/Control office collects morning position of crew, Diesel Crew Availability, Abnormality details, CMS Fuel position, Crew Booking, Average Rest etc. from lobbies which could be obtained from CMS.
- In ER (HWH Division), NFR (APDJ⁷⁷ Division), CR and SER reporting of various type of information by different lobbies to Control Office was being done manually and/or over telephone.
- In WCR and SR Control offices were collecting various types of information from different lobbies, though the same information was already available in CMS.

This highlights that CMS has not been implemented properly and management lacks faith in CMS application resulting in manual intervention/parallel manual operations.

5.7 Contracting Issues – supply of hardware/thin clients and maintenance thereof

5.7.1 Non-execution of Annual Maintenance Contract at CMS locations

As of March 2015, CMS application was available in 372 lobbies over IRs. In November 2010, RB approved the proposal for centralized processing of AMC of the TSS and Datacom equipment in CMS lobbies, after expiry of their initial warranty and intimated ZRs accordingly. However, in July 2011, RB turned down the proposal for centralized AMC and advised ZRs in August 2011 to ensure the maintenance of the equipment at CMS locations at zonal level. In this regard, audit observations are as under:-

- IT equipment/TSS equipment of 13 ZRs⁷⁸ were out of maintenance support since completion of their respective warranty period.
- Non- availability/maintenance of PC system led to halt of working of CMS and switch over back to manual working in NWR. The lobby at Nimpura (SER) was non-operational since 22 May 2013 due to the equipment being defective. Due to non-functioning of

⁷⁷ See glossary

⁷⁸ ECR, ER, SER, SCR, NFR, NER, CR, NWR, SWR, SR(UPS/Inverter of only two out of 26 lobbies were covered), WR, NR (Diesel lobbies of Delhi division) and NCR.

the TSS equipment, a computerized CMS lobby turned into a Centre of Manual reporting of the crew.

- In almost all the Diesel lobbies⁷⁹ of Delhi division (NR), equipment were lying in defective condition even up to two to three years without any support for their maintenance. In CR, two kiosks, integrated with biometric and CCTV, were lying unused in the lobby of Pune Electric Shed for want of repairs.

Different officers of Railway Administration reported to CRIS that a large number of equipment had gone defective in absence of maintenance support. It was reported by the CPM/IT/CRIS that at the end of March 2012, 34 lobbies were out of order and not performing their function of sign on/sign off. The situation arose due to failure of hardware, network connectivity loss etc.

Equipment failure (PCs/kiosks etc.) without proper maintenance support hampers the smooth operations of CMS. No action has so far been taken by Railways to solve the problem.

5.7.2 Non-replacement of over-aged and defective hardware and non-maintenance of stock for spares

As per Advance Correction slip No.-71 amending paragraph 219 of Indian Railways Financial Code-Volume-I, revised life of UPS was four years, that of Thin Clients was five years and for printers it was three years.

During the course of visit of locations by Audit parties for the purpose of assessment of performance of equipment at the CMS lobbies it was noticed that none of the old hardware aging more than the prescribed codal life was replaced at lobbies test checked over ER, NR, SER, NWR, ECR, NFR and SWR. It was further noticed that none of the locations, test checked under ER, SER, ECR, WCR, SECR, CR, SCR, SR, NWR and NR⁸⁰ had working spare equipment (Thin client, Monitor, Printer, UPS, Modem, Kiosk etc.).

5.8 IT Operations/CMS Operations

5.8.1 Custodian of lobbies not fixed

Proper functioning of a system requires a well-designed organization and identification of proper custodian of the same. Project papers revealed that lobbies under final phase will be under the control of Sr. DOMs while lobbies under Phase-I and II will be under the control of Sr. DEEs and Sr. DME. Such arrangement leads to difficulties in maintenance of the lobbies.

⁷⁹ Jind, MTC, Delhi, DEE, ROK, SSB

⁸⁰ MTC, ROK, NZM, JHL, Jind, GZB, DEE

AM/IT, in his inspection notes of 2012, raised the issue of authority as to who will execute the AMC for lobbies under final phase but no directives of RB in this regard were found in the records.

- Over CR, in Pune division separate contracts were awarded by Mechanical and Operating department for manning the CMS in respective lobbies. However, Electrical department did not consider giving the contract for operation of CMS at Pune Electric lobby. This indicated lack of co-ordination between Operating, Mechanical and Electrical departments.
- Over SWR, CMPE⁸¹ was the overall in charge at zonal level for monitoring the activities of CMS. However, no specific orders were placed on record to this effect. Over ER, for ASN lobby custodian was Sr.DEE/OPN and for HWH lobby, it was Sr. DOM.

Over SWR, persons responsible for uploading of circulars/caution orders, maintaining loco master, etc. have not been defined and therefore the same has not been done. No Joint Procedural Order was issued by SWR for effective usage of CMS.

5.8.2 Non-provision of dust free and air conditioned environment

Dust-free and air conditioned environment is essential for smooth working of the highly sophisticated IT equipment which can also reduce the maintenance requirement.

- During lobby visit, it was noticed by audit that most of the lobbies test checked did not have an environment conducive for smooth working of IT equipment as no air conditioned facilities were found in ER, SCR, ECoR, WR NWR, SECR, SER (SRC and Nimpura lobbies) ECR (except Dhanbad lobby) CR (except at Ghorpuri), NCR (MGS lobby) and SWR. AC facilities were installed at GHY, NGC, NBQ, NJP, MLDT, KIR lobbies of NFR but all were out of order since long.
- Dust free atmosphere was not found in Pune electric lobby of CR, TLHR Lobby of ECOR and at all selected lobbies of ECR.
- Chennai Central (MAS) lobby of SR had water seepage problem. Roof/walls of the Delhi lobby of NR were found leaking.

Tuglakabad lobby of Delhi division (NR) was situated within the railway tracks and shunting/train operations were hampering the movement of crew which affects efficiency of the crew. Moreover, situation of the lobby within the tracks was a risk to the life of the crew and others associated with lobby operations.

⁸¹See glossary

Chapter 6 – Review of Change Management and Outsourcing of Activities

Audit Objective 5

To review the effectiveness of change management and outsourcing of activities.

6.1 Change management – Lack of formal change procedure

Managing Change Controls are used to ensure that amendments to a computer system are properly authorized, tested, accepted and documented. CRIS is responsible for effecting changes in the software. However, no formal procedure, containing among other things, authority competent to make request for change, level/procedure of testing of changes, authority competent to approve changes, level of documentation for changes to be maintained etc. has been devised/prescribed for effecting changes in the CMS though as per CRIS IS Policy, each group is required to maintain Documented Change Management Procedure.

A review of the process being followed by CRIS for effecting changes in the CMS was conducted and it was noticed that testing by the end user and formal approval of the CAO/FOIS or any other officer authorized to approve changes in the software on behalf of end user (Railway/Owner) was generally not available on record.

Thus, lack of proper Change Management Procedure and non-involvement of end users in testing and approving software changes has inherent risk of incorrect and unauthorised changes in the application.

6.2 Non-Update of CMS documentation

As per CRIS's Information Security (System Documentation) Policy, all the systems/applications maintained and operated by CRIS should be comprehensively and accurately documented.

The System Design Document on CMS was also not complete and updated. It did not contain structure of each and every table including their field names, field types, field description and their linkages with other tables. Data Flow Charts were also not available in the document. Details of the reports to be generated/being generated by the system, and their format etc. were also not available in this document.

CRIS's Training Manual for CMS contains instructions/guidelines on 'How to Operate/Use CMS' but this document was not updated after April 2012 and was also not found uploaded on CMS website.

CRIS intimates about the new version release to all zonal railways and also makes disclosure of the changes made in the software on its website. However, as per the feedback received from the lobby officials over CR, NR, ER, NWR, NFR, SER, ECR, SWR, WR and SR, the lobby officials were generally not satisfied with the process of intimating changes/new version/features of the software and training and in the absence of the adequate knowledge/documentation about the added or modified features (like how to use them), lobby staff were handicapped in using such new features/options.

Thus, lack of complete and updated documentation could adversely affect the working of CMS at Data Centre level as well as at lobby level.

In reply (September 2015), RB endorsed CRIS remarks that the need for regular updation of documentation on System Design has been noted for compliance. Training manual has been updated till version 3.8 and further changes have been appraised separately but did not find it fruitful to upload it online due to large size.

The reply of Railway Administration is not acceptable to the extent that Training Manual has not been comprehensively updated and uploaded on the website which can be done in a number of ways.

6.3 Lack of dedicated staff at lobbies for CMS operations

In the absence of dedicated staff for operation of the CMS, the work of lobbies is being done by deploying the skilled personnel (Guards and Drivers) and outsourced personnel.

CMS operations of RPH, KWAE, AZ, PKR⁸² lobbies of ER, Pune Division of CR, KGP and SRC of SER, KUR division of ECoR, Chennai Division of SR, lobbies of SECR and SCR except at the Aurangabad (AWB) were being managed/operated by the outsourced staff whereas at HWH (Electrical, Diesel and Guard), BWN (electrical) lobbies of ER and at all the lobbies of Delhi division were being managed/operated by crew members (Drivers and Guards). Over NFR, CMS data feeding was being carried out even by Gate Man, ALP, Porters, Retiring Room Bearers etc. posted at different lobbies.

It was further noticed that there were no documented and approved policies listing specific activities which could be outsourced, as well as for ensuring the individual responsibilities of railway users *vis-à-vis* outsourced users.

The safety and quality of data was compromised as highlighted under paragraph 4.3. As manning of CMS involves safety requirement and financial implications in the form of running allowance, policy may be

⁸² See glossary

formulated duly describing the functional requirement and responsibilities of outsourced personnel.

The Railway Administration failed to create a dedicated pool of staff to operate CMS and also to ensure higher degree of continuity of trained staff in the job. This arrangement can strike a balance between deploying costly running staff and inexperienced outsourced staff for the operation of CMS.

Chapter 7 – Conclusion and Recommendations

7.1 Conclusion

The Crew Management System (CMS) is a critical IT application of the Indian Railways (IR) which manages crew assignment to various trains and directly impacts the safety of train operations. The application aims at managing over one lakh drivers and guards to ensure round the clock safe operations of IR. The objectives of this application were to improve the efficiency of train operations, effectively monitor crew and to comply with the safety requirements relating to crew management and to improve the financial management and monitoring. The extent of achievement of the objectives of CMS was evaluated in Audit and the aspects relating to IT application controls, IT security, continuity of the organization's business, contracting issues, project management/monitoring and change management were also reviewed.

Though introduction of CMS has helped in improving certain aspects of crew operations, the CMS has failed to fully achieve its objectives and may impact the efficient and safe running of trains as complete, accurate and updated inventory of crew, routes, locos, stations etc. was not maintained; Crew scheduling and assignment was not found effective; Booking of competent crew, fulfilling all the prescribed criteria, was not ensured; System was not fully capable of assisting the management in monitoring crew for training and for compliance with safety requirement. Biometric and Breath Analyser (BA) devices which were to be integrated with CMS for authentication of crew and ensuring that consumption of alcohol by crew is eliminated, have not been integrated with kiosk at all lobbies thereby compromising safe operations of trains. Grading and counselling of crew was not taking place at the prescribed periodicity and data was not updated accurately.

System lacked adequate controls to ensure completeness, accuracy and validity of data pertaining to various aspects of CMS operations. Lack of adequate controls allowed booking of superannuated crew. CMS was not configured as per extant orders/proper authority, delayed signing off the crew and lack of adequate controls led to inaccurate generation as well as payment of mileage allowances.

Multiple TAs using dummy loco number and dummy routes generated for booking crew did not ensure validation of crew competency for safe train operations.

Manual records were also maintained along with CMS database/records. Non-integration of CMS with pay roll system also resulted in failure to achieve the concept of paperless lobby.

Incomplete integration of CMS with FOIS, COA/ICMS resulted in engagement of manpower for maintenance of manual records and deprived the management to effectively monitor the CMS operations.

A number of reports generated did not provide correct information and failed to assist Railway Administration in deployment and optimum utilization of crew. SMS facility was not fully utilized to enhance the efficiency of CMS operations.

The CMS lacked adequate security measures to prevent unauthorised access to the system and uninterrupted operations. There was no Business Continuity Plan to continue operations 24x7 at lobby level. There was no arrangement for remote backup of data and BCP/DRP at remote site was yet to be implemented. No procedure was devised for effecting changes in the software.

There was no policy for outsourcing of CMS activities. There was lack of dedicated staff for CMS operations. Lack of trained manpower over different zones to operate CMS and availability of updated and complete documentation was also adversely affecting the operations.

Lobbies did not have any annual maintenance contract. Defective and overage equipment were neither replaced nor repaired. Standard IT environment could not be established in most of the lobbies.

7.2 Recommendations

- I. The Master tables in the CMS database need to be standardized. Necessary validation controls on important fields may be introduced for ensuring completeness and accuracy of data input. It will enhance the user's reliability and dependency on CMS and enable the users to dispense with the system of parallel maintenance of manual records.*
- II. Effective integration of CMS with Pay Roll Application, Control office Application, FOIS and ICMS should be expedited so that needs of the users may be served.*
- III. Grading and counseling of crew should be ensured at prescribed periodicity by completely and accurately updating the relevant database.*
- IV. Implementation of biometrics and integrated BA devices should be expedited at all lobbies to ensure crew validation at the time of sign on/off and that crew remains sober while operating the train respectively.*
- V. Adequate checks/validation controls should be introduced for data validation. Controls such as dropdown menu/list box etc. may be considered for validating data.*

- VI. *Adequate controls may be introduced and CMS may be configured as per extant orders/authority to prevent excess payment of allowances.*
- VII. *IT Security Policy including backup and password policy should be strictly implemented. Implementation of BCP/DRP at remote site/lobbies should be expedited to ensure uninterrupted operations. Physical security at lobbies may be strengthened. Software patches/updates may be timely and regularly installed.*
- VIII. *The Change Management Procedure should be devised. Formal training mechanism to educate CMS operators about new features of CMS may be ensured and complete/updated CMS documentation should be made available to all concerned.*
- IX. *Dedicated staff for CMS operations should be provided. In case outsourced staff is deployed for CMS activities then there should be approved policy for outsourcing, specifying the individual responsibilities of railway users vis-à-vis outsourced users.*



(SUMAN SAXENA)

Deputy Comptroller and Auditor General

New Delhi

Dated: 23 November 2015

Countersigned



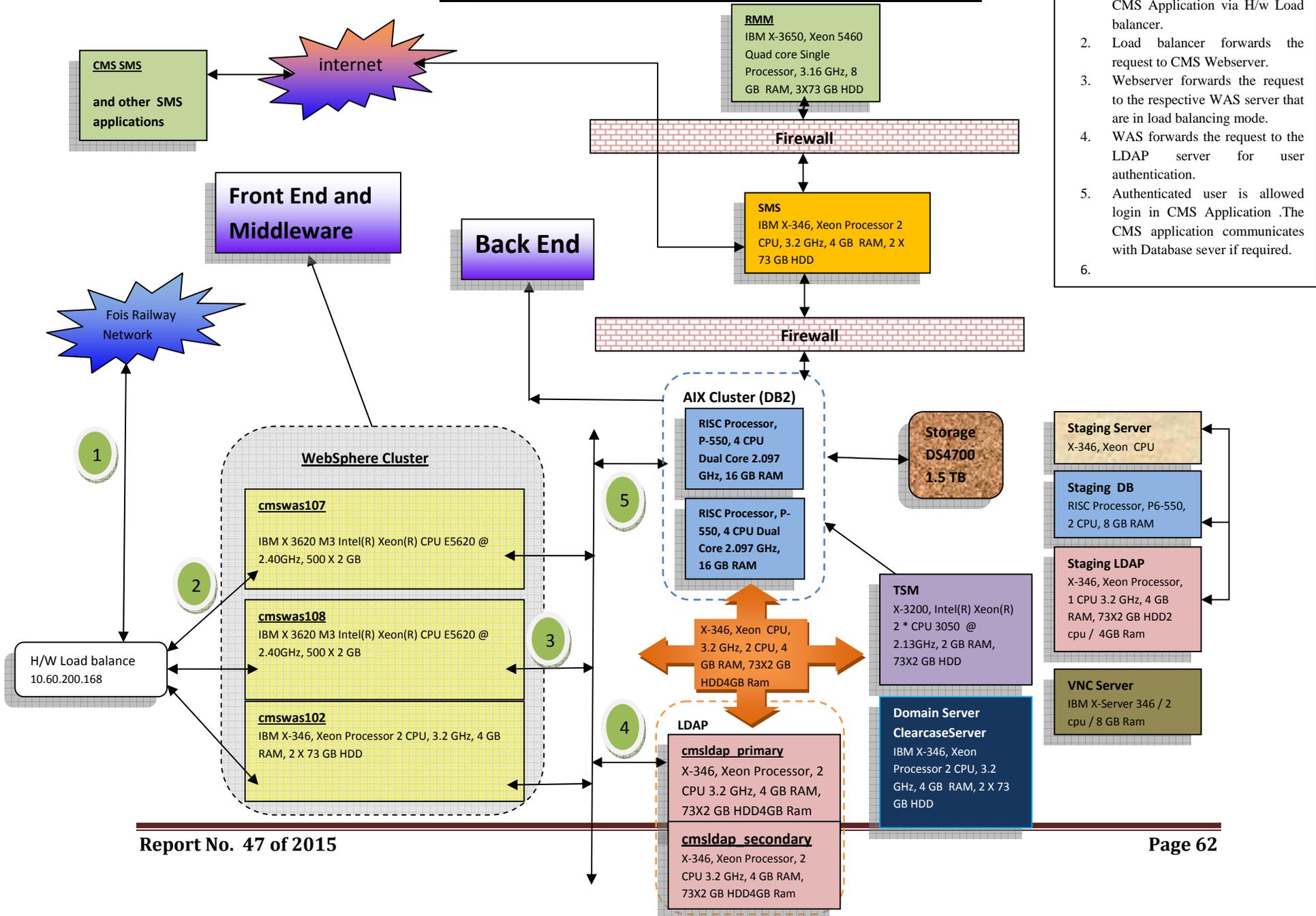
(SHASHI KANT SHARMA)

Comptroller and Auditor General of India

New Delhi

Dated: 23 November 2015

Appendix I - CMS Server Architecture (Reference Para 1.2)



Appendix – II
[Reference Para 2.1.2]

Statement Showing Discrepancies in the Crew Bio-data

Analysis of CMS database of 16 zonal railways (ZRs), available as on 5 December 2014 revealed as under:-

- i. The data of active crew had 483 records where age of the crew was less than 18 years (Boy Service).
- ii. In respect of seven crew members, the difference between date of birth and date of appointment was more than 38 years and in respect of 31 crew members it was more than 50 years.
- iii. There were 1161¹ crew members whose dates of appointment and promotion were same (NR, ECoR²).
- iv. In six cases, dates of birth and dates of appointment were same.
- v. There were 712³ crew members who had crossed their retirement age but were still found to be active in CMS.
- vi. Out of 142 active crew of NR who had attained their superannuation age, seven crew of NR were booked for duty between 1 to 55 times during 5 September to 5 December 2014.

A comparison of CMS data pertaining to date of birth, date of appointment and date of promotion of crew of Delhi division with their manual records revealed difference of a period upto 29 years between the two sets of records.

(Annexure – 3)

¹NR=1146, ECoR=15

²See Glossary

³Pertaining to all ZRs except SR

Appendix – III
[Reference Para 2.1.3]

Statement Showing Cases of Important Details of Crew Not Being Captured

- i. The data analysis of 23 fields of 85301 records of all ZRs revealed that overall there were 7,97,932 blank fields.
- ii. Correct/updated mobile number/address were not captured which may result in call not being served in time.
- iii. Updated/Correct promotion dates were not captured which may lead to wrong generation of reports.
- iv. Blank Traction details may lead to non-validation of crew competency.
- v. Blank Loco Inspector (LI) name may result in non-updation of grading and counseling data of a crew as a crew was linked to a particular Loco Inspector.

(Annexure - 4)

Appendix – IV
[Reference Para 2.1.6]

Statement Showing Incomplete/Incorrect Family Details

- i. As per crew Bio-data details, out of 70300 active crew members over 15 ZRs, 43490 active crew members had 1-10 dependents. As against this, family details of only 2109 crew members were available in CMS.
- ii. CMS lacked adequate controls to validate gender and marital status data of family member, crew name/father name as is evident from the following instances noticed over different zones⁴:-

Crew Id	Dependent's Relation	Gender	Marital status
BHC 7066	Wife	Male	Unmarried
BHC7066	Son	Female	----
HWH1182/GZB1872	Wife	Female	Unmarried
JMP1328/MTC1120	Daughter	Male	--
NH1100	Sister	Male	---
DDN1028	Widow Mother	Male	

- iii. Data analysis revealed that CMS neither validated crew name, father name nor ensured completeness of data as it accepted single character crew name, father name field were found blank/contained value like '- '.

(Annexure - 7)

⁴ECoR, ER, NR, WR, SECR, SCR, NCR, WCR, SER

Appendix V

[Reference Para 2.1.7]

Statement Showing Details of Locos Having No Corresponding Zone Codes

Loco Traction/Gauge →	3PH	DSL	ELEC	MG	NG	TOTAL
No. of Locos →	500	699	413	5	83	1700

Appendix VI
[Reference Para 2.1.8]

Statement Showing Incomplete/Inconsistent Data of Station, Routes, Distance etc.

- i. Zone and division codes for 257 stations were not available in CMS database.
- ii. On ER, NWR, SECR, NER and SWR⁵, 226 stations were not available in CMS.
- iii. On ER, NFR, SCR⁶ and SWR, codes of 43 stations were found to be incorrect in CMS.
- iv. On CR, ECR, ER, SCR, SER and ECoR⁷, 159 routes were not available in CMS.
- v. Over ER, NCR and SCR, on comparison of distances recorded in CMS and as available in Working Time Tables, Audit found that in respect of nine routes, the distances recorded in CMS were lower by 0.08 kms. to 408.76 kms. whereas in respect of 20 routes, the distances recorded in CMS were higher by 0.15 kms to 57.3 kms. Capturing of wrong distances leads to manual corrections of mileage reports.
- vi. Audit also found that the distances recorded in CMS in respect of the above 23 routes were higher than the distances recorded in Rate Branch System (RBS) by 0.14 kms to 229.80 kms. Whereas in respect of six routes they were lower than the distances recorded in RBS by 0.08 to 46.08 kms. Capturing of wrong distances leads to manual corrections in mileage reports.
- vii. CMS did not contain the route Ghorpuri (GPR) to Kolhapur (KOP) via Pune, whenever the crew was booked from GPR lobby of CR to work the train from Pune to KOP, the crew gets the mileage of 323 kms instead of 326 kms. The train leaves from Pune station and the crew has to bring the engine from GPR which is three kms. away from Pune. Hence, the crew gets three kms. less mileage and every time this needs to be corrected manually in the mileage reports.

(Annexure - 9)

⁵North Western Railway (NWR), South East Central Railway (SECR), South Western Railway (SWR)

⁶North East Frontier Railway (NFR), South Central Railway (SCR)

⁷Central Railway (CR), East Central Railway (ECR), South Eastern Railway (SER), East Coast Railway (ECoR)

Appendix – VII

[Reference Para 2.1.9]

**Statement Showing Details of Transactions/Discrepancies Where Crew
Were Booked with Fetch All Option**

- i. A review by Audit of the 2713032 finalized transactions/records⁸ of tables containing historical data for the period 5 September 2014 to 4 December 2014 of the 15 ZRs revealed that crew members (74 per cent) in 2009077 transactions were booked by choosing ‘Fetch Crew All’ option rather than ‘Fetch Crew as per Rule’ option.
- ii. During test analyses of reasons recorded for using ‘Fetch Crew All’ Option for crew booking, Audit found that out of 734925 transactions analyzed by six ZRs⁹, in respect of 145752 transactions, reasons were not recorded for using ‘Fetch Crew All’ option.
- iii. As per the analysis of 115538 transactions (NR), 8353 types of codes (reasons) were used for booking crew by using ‘Fetch Crew All’ option including 71 types of codes (reasons with minor variations) pertaining to LR (LR Due/LR not-updated etc. with minor changes) and 40 types of codes (reasons) pertaining to rest (Rest due/Rest Cancelled etc. with minor changes) and in respect of rest of the records, in majority of the cases, reasons recorded did not convey actual and meaningful information as some numeric/alpha numeric like AA, BB etc. were recorded for using ‘Fetch Crew All’ option. Similar position was observed in respect of the booking transaction using ‘Fetch Crew All’ option pertaining to other ZRs¹⁰.
- iv. During test analysis of ‘Crew Booked With/Without Rules Reports’ of Delhi division lobbies for December 2014, audit found that almost all the loco crew at DLI lobby and majority of Guards at DLI, Ghaziabad (GZB), Jhakar (JHL), Jind, Shakurbasti (SSB) and TKD¹¹ lobbies were booked by opting ‘Fetch Crew All’ option rather than ‘Fetch Crew as per Rule’ option. However, during February 2015, the percentage of Loco crew booked by using ‘Fetch Crew All’ option at DLI lobby was nearly 50 percent but almost all/majority of the Guards at DLI, GZB, JHL, Jind, TKD & SSB lobbies were still booked by using ‘Fetch Crew All’ option.

(Annexure - 10)

⁸A transaction/record contains details of TA, call book/receive time, sign on/off time etc. of one crew.

⁹NWR, NFR, NR, SCR, ECoR and SER

¹⁰NWR, NFR, SR, SCR and SER

¹¹See Glossary

Appendix VIII

[Reference Para 2.1.10]

Statement Showing Results of Analysis of Data of Call Made to Crew

An analysis of 2599975 transactions of 16 ZRs pertaining to Crew Calling Time relevant to 5th September 2014 to 5th December 2104 revealed as under:-

- i. Calls were found to be made in 173311 transactions after train scheduling/ordering time.
- ii. In respect of 559558 transactions, calls were found to be made more than 165 minutes before/in advance of train ordering time.

(Annexure - 11)

Appendix – IX

[Reference Para 2.1.11]

Statement Showing Results of Analysis of Data Pertaining to Call Serve Time and Receive/Acknowledge Time

An analysis of the call serve time and call receive/acknowledge time of 2745140 transactions (historical data) of 16 ZRs pertaining to 5 September 2014 to 5 December 2014 revealed as under:-

- i. In two cases (one each from NR and SER), calls were found to be received even before the calls were made indicating weak application control.
- ii. In 441317 cases, calls were found to be acknowledged 165 minutes after call were made.
- iii. In 1488253 cases, calls were acknowledged within 30 minutes.

(Annexure - 12)

Appendix – X

[Reference Para 2.1.12]

Statement Showing Results of Analysis of Data Pertaining to Crew Sign On Time

An analysis of 2771169 transactions of 16 ZRs revealed as under:-

- i. In 724513 cases, crew were found to have signed on or after train ordering time.
- ii. In 338653 cases, crew were found to have signed on less than 10 minutes before train ordering time against the requirement of 10 to 45 minutes before expected departure (ordering) time of the train.

(Annexure - 13)

Appendix XI

[Reference Para 2.1.13]

**Statement Showing Results of Analysis of Data pertaining to Supervisory
Approval of Crew Sign on Time**

Analysis by Audit of 3070897 transactions of 16 ZRs revealed that:

- i. In 1425 cases, Supervisor approval of 'crew sign on' time was prior to the 'crew sign on' time.
- ii. In 2096485 cases, 'crew sign on' time was approved by Supervisor after 30 minutes or more from 'crew sign on' time.

(Annexure - 14)

Appendix – XII

[Reference Para 2.1.14]

Statement Showing Discrepancies in Supervisor Approval of Crew Sign off Time

An Analysis of 1642377 transactions of 15 ZRs¹² revealed that:

- i. In 143062 transactions, crew sign off approval time indicated lack of data input validation control.
- ii. In 612965 transactions, Supervisor was found to have approved ‘crew sign off’ time after a delay of more than one hour.

(Annexure – 15)

¹² All zones except NER

Appendix – XIII

[Reference Para 2.1.15]

Statement Showing Irregularity in Crew Sign on *vis-à-vis* Sign off Time

An analysis by Audit of crew sign on time and crew sign off time of 1367760 transactions approved by Supervisor pertaining to 15 ZRs¹³ revealed that:

- i. In 160 transactions, ‘crew sign on’ and ‘sign off’ time was same, i.e. the sign on/off transactions were wrongly conducted.
- ii. A difference of more than 20 hours between the ‘sign on’ and ‘sign off’ times in 38541 transactions indicated that either the crew had not timely performed his sign off duties or dummy sign off times were approved.

(Annexure – 16)

¹³All zones except NER

Appendix – XIV**[Reference Para 2.2.1]****Statement Showing Status of Usage of SMS over Different Zones**

A review of CMS database pertaining to crew and SMS from 5 September 2014 to 5 December 2014 revealed the following:

- i. Position of SMSs communicated on all ZRs except SR with active crew members was as under:

TYPE OF SMS	NO. OF SMS
Sent	644079
Acknowledged/Replied	68454
Pending	349759

- ii. Only 10.63 *per cent* of the SMSs sent were acknowledged/replied by the crew which was very low and 54.30 *per cent* of the SMSs sent to the crew were shown as 'Pending', which was too high.
- iii. The SMS service was not used at 43 lobbies (ten lobbies of SCR, seven lobbies each of CR and WR, five lobbies each of NFR and WCR, four lobbies each of NR and SER and one lobby of NER).
- iv. In 13983 cases, even though Closed User Group (CUG) mobile status was shown as Y, the mobile number was shown as zero on 13 ZRs.
- v. In 45062 records of nine ZRs, though CUG mobile was available with the crew, the CUG status was shown as blank.
- vi. On CR, NR, NWR and SCR, 170683 SMSs were sent against 1066202 sign on transactions which was only 16.01 *per cent* of total sign on transactions.
- vii. On NR, just 178 SMS were utilized by 11 lobbies for serving calls to crew.

(Annexure - 17)

Appendix – XV

[Reference Para 2.4.1]

Statement Showing Cases Where LR Due Date Was Not Computed Correctly

- A.** An analysis of LR related data, **having total number of LR trips as zero**, pertaining to the period 1 December 2013 onwards¹⁴, revealed as under:-
- i. In 153264 records, due dates of LR were prior to last drive date.
 - ii. In 93137 records, last drive dates and due dates of LR were same.
 - iii. In 4503 records, due dates of LR were greater than last drive dates but the difference was less than 89 days *viz.* CMS did not correctly compute due date of LR with a gap of three months.
 - iv. In 236145 records, the difference between due dates of LR and last drive dates was more than 92 days *viz.* CMS computed LR due date after a gap of more than three months.
- B.** An analysis of LR related data, **having total number of LR trips more than zero**, pertaining to the period 1 December 2013 onwards¹⁵, where LR due date had not expired¹⁶, revealed as under:-
- i. In 29563 records, the difference between Last Drive dates and LR Due dates was less than 89 days *viz.* CMS computed LR due dates within a period of three months.
 - ii. In 15955 cases, though trips of LR were pending but CMS computed due dates for a period of three months which was irregular.
 - iii. In 255 cases, where number of LR trips due were more than zero, CMS computed LR due dates after a period of three months (i.e. between 95 days to 180 days) which was irregular.
 - iv. In 2767 cases, where LR due dates had expired *viz.* LR due dates were prior to 6 December 2014 and LR trips were due, CMS computed LR due dates after a period of more than three months.

(Annexure - 19)

¹⁴ Last Drive Date from 1 December 2013 and onwards

¹⁵ Last Drive Date from 1 December 2013 and onwards

¹⁶ Last Drive dates were prior to 5 December 2014 and LR Due Dates pertained to period beyond 5 December 2014

Appendix – XVI

[Reference Para 2.4.2]

Statement Showing Discrepancies in Training Reports/Data

- i. An analysis of the CMS database as well as Training Reports on CMS revealed that CMS was depicting next due date for different types of training courses like Refresher Training Courses for Diesel and Electric Traction (REFD & REFE), Automatic Signaling (ASIG) training for Shunter etc. even though these were not required.
- ii. During review, Audit noticed instances where concerned officials of Delhi division lobbies (ANVR, NZM etc.) were not deputed for training on due dates. In response, lobby officials informed that a crew working on Diesel traction does not require refresher training of Electric traction and vice versa. Moreover, a crew who had attended REFE and REFD courses did not require 3PH and WDG4/WDP4¹⁷ training respectively and a Shunter does not require signaling training.
- iii. During analysis of training data, Audit found that CMS database depicted next due dates of ASIG training in respect of 24254 cases pertaining to 12 lobbies of NR whereas in respect of 73 cases of same lobbies, database did not indicate due dates of next ASIG training. As per Indian Railway General and Subsidiary Rules (NR-2011), Automatic Signaling training becomes due after one year and as per CRIS documentation on Business Logic for CMS (2006), Automatic Signaling training becomes due in six months. In Delhi division, in three cases, due dates of next ASIG training pertaining to the year 2014 were after six months and during the same year the due dates were after one year in respect of 3214 cases.
- iv. In SECR, CMS database depicted next due dates of ASIG training in respect of 2526 cases pertaining to 15 lobbies of SECR. Out of 2526 cases, in 316 cases, due dates of next ASIG training pertaining to the year 2014 (BSP Division) were after six months and during the same year it was after one year in respect of one case (BSP Division). Over ER, CMS database depicted next due dates of ASIG training in respect of 1070 cases pertaining to 14 lobbies of ER whereas in respect of one case, database did not indicate due date of next ASIG training.

¹⁷Training pertaining to Locomotives of different types

Appendix – XVII**[Reference Para 2.4.3]****Statement Showing Discrepancies Noticed in Loco Details used in TA**

- i. Review of the Traffic Advice (TA) data pertaining to nine¹⁸ zones for the period 5 September 2014 to 5 December 2014 revealed that in respect of 28305 TAs of General type where crew were booked for working/spare type duty and their 'sign on' time was approved by Supervisor, the loco type was recorded as zero. However, audit found that no loco of such type was available in the master tables.
- ii. From an analysis of CMS data of TA, Audit found that most of the lobbies were using dummy numbers of locos for generation of multiple TAs as is evident from the following:
 - a. Invalid loco numbers were used for generation of multiple TAs with loco number as 123 and 11111 in four lobbies¹⁹ of SECR.
 - b. Four lobbies²⁰ in Jaipur division of NWR attached loco number 111 with their multiple TA for booking of 291, 1719, 17 and 1414 crew respectively in September and October 2014. In fact, loco number 111 was attached with 54 trains of above four lobbies of Jaipur division on 2 October 2014.
 - c. Over CR, in 2829 records for generation of TA, invalid loco number i.e. 11111 was entered.
 - d. Over NR, Lucknow (LKO) lobby attached loco number 147 of type '0' with their 25 TAs on 14 October 2014, DLI lobby attached loco number 1111 of type '2' with their 65 TAs on 8 November 2014.
 - e. Over NR, multiple lobbies²¹ used loco number 1111 on 30 November 2014 with their multiple TAs.
 - f. Over ER, on 20/11/2014 loco number 100 was used for 128 times in different lobbies of ER²².
 - g. Over WR, in respect of 93452 records, four fields of loco number and one field of loco type for capturing loco details contained zero. Over ER and NFR loco number 100/1000/10000 was used in 33756 cases²³.
 - h. Over ER & SCR, no loco number was used in 145521 cases²⁴.
 - i. Over SCR, in 1714 cases, loco number 111 and in 5163 cases, loco number 123 was used. Over ER, loco number '0' was used in 39 cases and loco number '1' was used in six cases.

¹⁸ NFR=53, NWR=11646, SWR=2376, NR=2376, CR=830, ER=819, SECR=3361, SER=323, WR= 5676, SCR=845 (Total=28305)

¹⁹ Raipur, MIB, CWA, DGG

²⁰ Bandikui, Phulera, Jaipur & Rewari

²¹ DLI, Ludhiana (LDH), Ferozepur (FZR), Delhi Sarai Rohilla (DEE), Amritsar (ASR), Pathankot (PTK), Bathinda (BTI)

²² (AZ-53 times, HWH-47 times, KOAA-6 times, MLDT-7 times, PKR-14 times, RPH-1 time)

²³ ER=13834, NFR =19922

²⁴ ER=36385, SCR=109136

Appendix – XVIII

[Reference Para 2.4.8]

Statement Showing Discrepancies in the Crew Counseling Data

- i. In order to increase the knowledge base of a crew, various methods are used like deputing crew to various training, their counseling by their LIIs etc. In this regard, RB issued its orders²⁵ on 28.10.2014 giving norms for periodicity of crew counseling. On the same date, NR²⁶ issued orders in this regard. As per NR order dated 28 October 2014, loco pilots of safety grade ‘A’ were to be counseled once in two months, of safety grade ‘B’ were to be counseled once in one month and of safety grade ‘C’ were to be counseled once in a fortnight. As per RB orders, ‘A’ Grade crew to be counseled once in three months, ‘B’ grade crew to be counseled once in two months and ‘C’ grade crew to be counseled once in a month. Thus, the periodicity of counseling in both the orders was not same.
- ii. Audit has done the data analysis in the light of the orders of NR to review the position of counseling. In order to see the last counseling imparted to the crew, reference had to be made to the data prior to 28th October 2014. Audit found during the review of the CMS data for the period prior to 6 December 2014 pertaining to periodicity of the counseling of crew (Grade A, B and C) by their Chief LI/LI that around 29 percent crew over NR, 88 per cent crew over NFR and six per cent crew over NWR were not counseled at the periodicity prescribed by NR.
- iii. It was further noticed over NR from the analysis of CMS data for the period prior to 6 December 2014 that 23 per cent crew were not found counseled as per the periodicity prescribed by RB.
- iv. Analysis of counseling data available at kiosks of various lobbies of Delhi division²⁷ in January 2015 to March 2015 also confirmed that crew grading and counseling was not being done at the prescribed periodicity.
- v. Out of total 7840 active crew on CR, data pertaining to counseling of only 1593 crew had been captured in CMS. The number of times the counseling had been done ranged between one to 157.
- vi. Over six zones²⁸ there were 2167 instances where crew were counseled by Loco Inspector, but IDs of Loco Inspectors, who counseled the crew, were not available on CMS record.

(Annexure - 21)

²⁵Letter Number 2012/Safety(DM)/7/25 dated 28.10.2014(As per RB letter dated 28.10.2014)

²⁶No. 45RS/9/Train Operation dated 28.10.2014

²⁷MTC, DEE, Jind, SSB etc,

²⁸CR=529, ECOR=773, SECR=446, NR=101, NFR=98, NWR=220 (Total =2167)

Appendix – XIX

[Reference Para 2.4.10]

Statement Showing Status of Breath Analyzer Devices over Different Zones

- i. Breath Analyzer (BA) could not be integrated with the system in 12 ZRs²⁹. Integrated BAs were installed over three lobbies of Delhi division (NR), five lobbies of ECoR, three lobbies of WR and two lobbies of NWR test checked during audit. In PSA lobby of ECoR, though BA has been integrated with CMS, the integration was not functioning. BA unit installed and integrated into the CMS/kiosk at MAS lobby during 2012 was deactivated due to software problems. In other lobbies of SR, the entire BA testing of crew was being done using hand-held BA units.
- ii. In other selected lobbies in IRs, the kiosk was not having an integrated BA unit. The entire BA testing of crew was being done using hand-held BA units, supervised by Chief Crew Controller/Crew Controller. The results were then recorded in CMS by clicking on the relevant check box. As the process taking the BA test by crew is manual, it lacks vital safety related system control. Hence, possibility of misuse of this feature cannot be ruled out.
- iii. An analysis of the crew's Breath Sign on data pertaining to 5 September to 5 December 2014 revealed that in 246 cases over seven ZRs³⁰, the Supervisor approved 'crew sign on' though the value of 'breath sign on' was 'N' viz. crew had not performed 'breath sign on' and CMS allowed approval of crew sign on which indicates weak controls to validate crew sign on.

(Annexure - 23)
- iv. As per the value recorded in the Supervisor's approval field of crew 'sign on', in 27³¹cases of crew 'sign on' over NR, NFR and CR respectively, Breath Test failure (Code BF) was recorded as reason for non-approval of crew 'sign on' by the Supervisor during 16 October to 5 December 2014 but the value of 'breath sign on' field in all the cases was found to be zero (viz. crew had cleared BA test). This indicates inadequate controls to validate crew sign on.
- v. At DEE lobby of NR, results of BA test were stated to be directly recorded in CMS and no manual register for recording results of BA test was maintained. In the absence of Bio-metric and integrated BA devices, it could not be ascertained whether the BA test of all crew was being conducted at all at DEE lobby.
- vi. Maula Ali (MLY) lobby of SCR is a crew changing point between Hyderabad (HYB) and Secunderabad (SC) divisions. Audit found that this lobby is not functional and the activities relating to sign on/off, breath analysis at MLY lobby were not monitored as no staff was posted at MLY lobby. The data entry work pertaining to crew operations of MLY lobby like sign on/off, breath

²⁹ ER, CR, WCR, ECR, NCR, SER, SECR, NCR, NFR, NER, SCR and SWR

³⁰ NR, SCR, SER, WCR, SECR, NCR and CR

³¹ NR=23, NFR=2, CR=2

analysis etc. was being done at its sister lobbies³² at KCG & SNF which were around 13-14 kms. away from MLY lobby.

- vii. In CR, it was noticed by AEME³³ (Fuel) during his inspection of Daund lobby that out of 372 staff signed on/off on 29 December 2014, 109 crew did not take the BA test. Failure to ensure BA test results for all the crew shows lackadaisical attitude of the Railway administration to this vital safety aspect. There was an incident on CR during January 2015 (press clipping) where one Motorman of suburban train was caught in a drunken state which could be a result of failure of BA test at the time of sign on. He had hit the emergency brake causing the train to halt after it was pulling out of the station. The mandatory BA test through integrated BA device at the time of sign off will mitigate the risk of crew consuming alcohol en route or during the trip.

³² Sister lobby concept is applicable where CMS user wants to serve call to Lobby "A" crew but the crew need to sign ON at Station "B". Similarly on returning, the crew signs OFF at station "B" but he has to be made available at station A for further crew booking.

³³ See glossary

Appendix – XX

[Reference Para 2.5.1]

Statement Showing Details of Discrepancies in the Configuration of Mileage Allowance

- i. A review of the allowances configured in the CMS by various lobbies of 10 ZRs³⁴ revealed that in violation of the extant rule, CMS was configured to allow charging of 80/120/160 kilometrage per day (depending upon the type of duty to be performed) to crew for attending non-running duties/training at their headquarters. Between 9 March and 4 December 2014, CMS allowed mileage allowance of 21136799 kms. valuing around 485 lakh to crew of ten ZRs for attending various non-running duties/training courses³⁵ at their Headquarters.
- ii. Over CR and NR, in 111 cases³⁶, even though crew was shown to perform non-running duties at other than headquarter, his headquarters locations and outstation locations were exactly the same, however, CMS allowed outstation allowance of 13,560 kms.³⁷ This indicated inconsistent data.
- iii. In CMS, 98 types of non-running duties were defined in the master data of CMS. However, one to 100 types of non-running duties³⁸ were found processed under CMS by different ZRs. The list also included non-running duties such as NREST, CREST, WOFF etc. which were not found in the master list. It was observed that non-running allowance in terms of kms. was computed by CMS for non-running duties such as Absent, LAP, CL etc. for which it was not allowed.
- iv. Based on the results of CMS data analysis, test check of physical records was conducted at TKD (NR), Bilaspur (BSP) and Brajrajnagar (BRJN) (SECR) lobbies and during test check audit found instances where payment for mileage allowance @ 160 kms. was made to officials for performing non-running duties at their headquarters (NR, SECR) instead of payment of pay element equivalent to 30 per cent of the basic salary.

(Annexure - 24)

³⁴ CR, ER, ECR, ECoR, NR, NWR, SCR, SECR, WCR, WR, NCR

³⁵ Such as REFE, PD, SHDT, PCR, REFD, REFSC, SFCM, CTCC, CTLC, PME, TCC, STDTO etc.(see glossary)

³⁶ CR=106, NR=5

³⁷ CR=12800, NR=760

³⁸ such as REFE, PD, SHDT, PCR, REFD, REFSC, SFCM, TCC, CTCC, CTLC, PME, STDTO etc.

Appendix – XXI

[Reference Para 2.5.2]

Statement Showing Details of Discrepancies in Admissible Kilometrage

- i. At DEE lobby, Audit noticed during test check of mileage reports that when a crew (DEE1089) was relieved at 19:15 hrs on 9 November 2014 for Safety Camp training at Dhampur, he was immediately booked in CMS as ‘on training’ and the crew returned back on 16 November 2014 at 08:00 hours. He was allowed 1440 kms. by CMS which included ‘admissible kms.’ of 320 as CMS has been configured for DEE lobby to pay 320 kms. (160x2 for to and fro) as admissible kms. for attending non-running duties at Dhampur and additional 160 kms. for one additional day. However, his mileage allowance for training period was corrected manually by lobby and he was paid mileage allowance of 1120 kms. (160x7) for seven days, i.e. six days of training and one additional day. Thus, the mileage allowance paid was not as computed by the CMS.
- ii. Over ER, it was noticed that crew of two lobbies³⁹ were deputed during the month of November 2014 and March 2015 for PME training at Howrah (HWH) for two and three days respectively. However, the CMS allowed 536 kms. and 800 kms. respectively to crew as mileage allowance which comprised 320 kms. and 480 kms. for attending training and another 216 kms. and 320 kms. as admissible kms. as these lobbies were configured in CMS for charging additional 216 kms. and 320 kms. as admissible kms.

(Annexure - 25)

³⁹AZ (ID AZ1176) and RPH (ID RPH7176) lobbies

Appendix – XXII

[Reference Para 2.5.6]

Statement Showing Details of Discrepancies/Irregularities in Crew Sign on Time vis-a-vis Train Departure/Arrival Time

Zone Names	Discrepancies/Audit observations
SECR, ER, CR, SER, NFR, SR & NCR	In 1349 cases, crew signed on after FOIS train departure time with a gap of one minute to 93 hours 10 minutes.
SECR, ER, CR, SR & NCR	In 3073 cases, crew signed on before FOIS train departure time with a gap of 31 minutes to 2635 minutes.
SCR	In 2022 cases, crew signed off before FOIS arrival time of the train and in 2020 cases, crew signed on after FOIS departure time of the train.
CR, ER & SER	In 33 cases, FOIS train departure time and crew's sign-on time was same viz. there was no gap though as per rules, crew had to signon 10-45 minutes prior to the departure of the train.
NR & SER	in 6549 cases, CMS train departure time was after train ordering time and the gap was in the range of 30 minute to 599 minutes.
NR, CR, SER & NWR	In 9570 cases, crew signed on after train ordering time and the gap was in the range of one minute to 1485 minutes.
NR, CR, WR, NWR & NFR	In 1183 cases, crew signed on after CMS train departure time and the gap was in the range of one minutes to 104 hours.
SCR	Comparison of CMS data with COA data revealed that in 45 cases, where train was late, the 'sign on' time was just 15 minutes to two minutes before the actual departure time of the train. In three cases the crew 'sign on' time was same as the scheduled departure time of the train and in 62 cases the crew 'sign on' time was later to the scheduled departure time. In all the 65 cases the train got delayed. In 17 cases, crew 'sign on' time was later than the actual departure time (COA time). The time difference ranged from one minute to 29 minutes in 16 cases and in one case the time difference was 985 minutes.

(Annexure - 30)

Appendix – XXIII

[Reference Para 3.2]

Statement Showing Discrepancies in Particulars of Traffic Advice

Train Number/Name & Lobby Name	Particulars of discrepancies noticed
14095 (Himalyan Queen) (DEE)	In one TA of 30.11.2014, train ordering time was 05:35 and in second TA of 30.11.2014, train ordering time was 05:40.
14086 (Haryana Express) (SSB)	On 26.10.2014, TA was prepared from SSB to DBSI, on 27.10.2014, TA was prepared from SSB to NZM and on 30.10.2014, TA was prepared from SSB to DLI station.
12455 (DEE-SGNR Express) (JHL) (DEE-S.F.)	On 16.09.2014, TA was prepared for Mail service type train of Train Number 12455Exp and on 18.09.2014, TA was prepared for Freight service type train of Train number 12455Exp, though on both the days, other particulars like From station, To station, Loco Number, Loco Type, Ordering Time, Route name etc. were same. On some days, this train was operated with train number 12455Exp and on other days , this train was operated with train number 12455.
14006 (Lichchavi Express) (ANVR)	On 25.11.2014, TA of train number 14006 was prepared for Freight type train and on 26.11.2014, TA of train number 14006 was prepared for Passenger type train On 2.11.2014, TA of train number 14006 was from ANVR to CNB for Mail service type train and on 3.11.2014, TA of train number 14006 was from ANVR to TDL for Passenger service type train In one TA of train number 14006 of 23.9.2014, Train ordering time was 21:45 and in other TA of train number 14006 of 23.09.2014, train ordering time was 23:30.
18409 (Sri Jagannath Express.) 18625 (Patna Hatia Super Express) and 18619 (Ranchi Dumka Intercity Express)	Over SER, no uniformity as to service type was maintained while preparing TAs. On some days, a train operated as express train, was operated as passenger/ freight train on other days.

Appendix – XXIV

[Reference Para 3.10]

Statement Showing Details of Cases Having Inconsistencies in CMS Reports

- i. A review of the Crew Due for Periodical Rest (PR) Report revealed that the report was not giving correct output. For example, ‘Crew Due for PR Report’ of ANVR lobby of 3 March 2015 depicted that two crew (ID ANVR1041 and ANVR1062) had taken their last rest on 28 February 2015 and 1 March 2015 but the same report indicated that the crew had not taken any rest during the last seven days from the report date i.e. 3 March 2015.
- ii. As per CMS ‘Crew Training History Report⁴⁰’ of 3 March 2015, Crew (ID ANVR1046) was due for PME on 14 September 2014 but the ‘Crew Training Particular Report⁴¹’ generated at the same time indicated that the Crew ID ANVR1046 was due for PME training on 12 September 2018. The above facts were also verified at ANVR Lobby and it was found that report was giving wrong output. (NR)
- iii. A comparison of different reports at PNP lobby revealed that as per Crew Mileage Summary Report for the month of February, there was a BoR of 36 hours but as per BoR Report for the month of February 2015, there was a BoR of 29 hours. (NR)

⁴⁰ The report depicts details of various training of a crew like training name, training due date and done date etc.

⁴¹ The reports depicts details of a specific training course like training name, crew names, their training due date and done date etc.

Appendix – XXV

[Reference Para 4.1]

Statement Showing Deficiencies in Security Measures Noticed over Different Zones

- i. Over nine ZRs⁴², CCTV cameras were not installed at lobbies test checked during audit. Only at three out of seven lobbies of WR, CCTV cameras were installed on KIOSK machines.
- ii. Over SWR, CCTV camera installed at Hubli lobby was not connected to any monitor for effective monitoring on real time basis.
- iii. Over ECR, some lobbies such as Barwadih, Dhanbad and Patratu had single CCTV camera installed which was not sufficient to monitor the activities of a large number (200 to 300) of crew.
- iv. Over ER, two lobbies were located beside the 2nd Class Waiting Room in Howrah Station, thereby exposing the lobbies to the risk of unauthorized entry.
- v. Over CR and WCR, CMS equipment were placed in a controlled atmosphere at lobbies of CR and WCR and CCTV surveillance was available in all the lobbies of Pune division of CR but not at the lobbies of WCR.

⁴² NMP and ADL lobbies of SER (CCTV cameras available at KGP and SRC lobbies over SER were not functional), six lobbies of SECR, four lobbies of NWR, 14 lobbies of SCR, five lobbies of ECoR, all CMS lobbies of Delhi division of NR, NFR lobbies, NCR lobbies (except Allahabad lobby) and NER lobbies (Except Gorakhpur Lobby)

Appendix – XXVI

[Reference Para 4.3]

Statement Showing Deficiencies/Irregularities Noticed in the Management of Railway CMS Users at Different Levels

- i. Over NR, at DLI lobby, five CMS users were assigned administrative (DRMN)⁴³ privileges, one of them was in the name of 'Test' with designation as 'Mobile'. At SSB, NZM and GZB lobbies, two users had administrative (DCMN)⁴⁴ privileges and one of the two users having administrative privileges was either an Assistant Driver or Guard viz. the user was not a Supervisor.
- ii. Over ER, four users having administrative privileges (DRMN) were created in division name and division name was recorded as designation i.e. 'ASN', 'HWH', 'MLDT' & 'SDAH'
- iii. Over SECR, four DCMN (Administrative) users were created in the name of 123, ABCD, GGSGS, CCC. Over SWR, one Administrative ID was created in the name of 123 and one official had two IDs with administrative privileges. Over ECoR, at TLHR lobby, two users had administrative privileges and one of them was in the name of TLHR Console. Over NER, one TNC had DCMN (Administrative) privilege. At Rourkela of SER, two active users had DCMN (Administrative) privilege. Over LKO Lobby of NER, three users had DCMN/DRMN (Administrative) privilege.
- iv. Over NR, ER, NER, SER, SCR, WCR, NWR, CR, SR, ECoR and NFR⁴⁵ ZRs, user IDs were created in the name of lobbies/obscure names and over SECR, user ID was in the name of zone. Over CR, 16 different user IDs were created with names of the users as "Lobby".
- v. Over NER, one user created for the representative of Annual Maintenance Service provider firm was designated as Assistant Loco Pilot.
- vi. On WR, four records of duplicate lobby name and user ID were found at the lobbies test checked.
- vii. Over 13 ZRs⁴⁶, 888 TNC/ALP/Box Porter/Cleaner/ Call boy, Gangman/RR Bearer/Private operators/Contractor/SLI etc. were assigned Supervisory privileges.

(Annexure – 38)

⁴³ Divisional Report Manager Privileges

⁴⁴ Divisional Console Manager Privileges

⁴⁵ (ALH & RBL with designation as Kiosk, AMGGTNC and AMGLTNC at AMG Lobby, DDNLS and DDNGS at DDN Lobby, N (JUC lobby), NI(FD lobby), FDGS of FD over NR), Bandikui over NWR, GD & MLN over NER, BWNA, BWNB, BNNO, AMLA, GPR, BWBI at BWN Crew Lobby, JMP at JMP Lobby, HWH DC, HWH SD, HWH GTNC at HWH Lobby, MLDT CMS, PSA with name as RRR (ECoR), MLDT DC at MLDT Lobby etc.

⁴⁶ NR, NWR, SER, NER, ER, NFR, NCR, SECR, CR, WR, SWR, SR, WCR

Appendix – XXVII

[Reference Para 4.3]

Statement Showing Details of Irregularities in the Management of CMS Users

Nature of irregularity	Particulars
Multiple Profile/User ID	<p>466 CMS users⁴⁷ over six ZRs, having same Lobby Name, User Name and Phone Number had two to 10 user profiles and multiple types of authority.</p> <p>40 users over NFR had IDs in the range of two to nine and over SER, 24 crew had 2-3 active crew IDs.</p> <p>Over SWR, two users had user IDs in two different lobbies.</p> <p>Over Pune division of CR, 14 different user IDs were created for single person.</p>
Users created in excess of requirement	<p>Over CR, 544 user IDs were created for 201 user names. Many of the user IDs created were not being used by the lobbies as verified during the lobby inspections.</p> <p>Over SCR, as many as 856 user ids were created for 42 lobbies on SCR, which seems to be very much in excess of the actual requirement and indicates that the un-used user IDs of the retired and outsourced staff were not being deleted from the system.</p> <p>The CMS users created for seven lobbies of SR visited by Audit were found higher than the actual requirement as against the requirement of around 12 users⁴⁸, all the lobbies (except MSB) had more than 25 users.</p>
Active User ID of ex-officials	<p>Profile Analysis and scrutiny of records at ANVR, MTC, ROK, Jind, Jhakhhal lobbies over Delhi division of NR, Kashipur and Farrukhabad lobbies of NER and NCB lobby of NFR revealed that user IDs of ex-officials/transferred officials, who were no longer associated with CMS, were still found to be in use/active.</p>

⁴⁷ NR=132, NER=8, SECR=70, ECR=113, ER=26, SCR=117

⁴⁸ Calculated on the basis of each lobby working on three shifts for four users (3 TNC+1 Supervisor).

Appendix – XXVIII

[Reference Para 4.6]

Statement Showing Deficiencies in Infrastructure/Business Continuity Plan at Lobbies

- i. Connectivity/link failure, slow speed of network between central server and CMS client machines were the main reasons for disruption of continuous CMS operations over lobbies of 13 ZRs⁴⁹ test checked during audit. Though RB had issued instructions for maintenance of route and media diversity/alternative communication channels for ensuring 24x7 connectivity but the same was not ensured for the lobbies of seven ZRs⁵⁰ test checked during audit. Route and media diversity/alternative communication channels were found available during test check of selected lobbies over SR.
- ii. The arrangements for alternative power supply at lobbies of eight ZRs⁵¹ were not adequate. Power backup equipments supplied for GHY and NGC lobbies of NFR were not installed and were lying idle for more than two year. Adequate Power backup facility was available at the lobbies of SECR and WCR.
- iii. CMS equipments/devices of lobbies at 13 ZRs⁵² test checked during audit were not covered under AMC. CMS equipments/devices were covered under AMC at ECoR, SECR, NR (Electric lobbies of Delhi division), and equipment/devices of WCR were under warranty.
- iv. Working spare equipment/devices were not available for immediate replacement of defective equipment for ensuring continuous operations at lobbies of 11 ZRs⁵³. Working spares were available at the lobbies of ECoR and WR.
- v. Fire Extinguishers were found to be expired/not installed at SR⁵⁴, SWR (Castlerock), NWR (Jaipur), NFR Lobbies, ER (four lobbies), ECR(were not adequate at ECR). Fire Extinguisher were available at lobbies of WR, NR, CR, SER, SECR, WCR.
- vi. Smoke Detector/Fire Alarm System were not found installed at the lobbies of all ZRs test checked by Audit.

⁴⁹CR, NR, SR, SCR (13 lobbies), ECoR, SECR, ER, ECR, NFR, NCR, NWR, WCR, SER

⁵⁰Delhi Division (NR), SECR, NFR, ECR, SCR (available only at two lobbies), ER, WCR

⁵¹WR (three lobbies), SR (11 lobbies), SCR(one lobby), ECoR (two lobbies), SWR, ER (five lobbies), NR(one lobby only-GZB), NWR

⁵²ECR, ER, SER, SCR, NFR, NER, CR, NWR, SWR, SR (UPS/Inverter of only two out of 26 lobbies covered), WR and NR (Diesel lobbies of Delhi division).

⁵³ECR, ER, SER, NWR, SECR, CR, NR (MTC, ROK, NZM, JHL, Jind, GZB, DEE lobbies), SR, SCR, WCR

⁵⁴Expired at Tambaram lobby in January 2015 and were also not located at a place which could facilitate their immediate usage during emergency

Appendix – XXIX

[Reference Para 5.3]

Statement Showing Cases of Delay in Commissioning of Lobbies over Different ZR

- i. The work of supply and commissioning of TSS equipment in 39 locations was awarded to a firm in January 2012. The date of completion of commissioning was fixed as 25 April 2012. There was delay in commissioning initially due to development work at CRIS and later-on due to non-availability of site readiness. As of April 2014, only 15 lobbies could be commissioned and 24 lobbies were still pending as site was not ready.
- ii. Against the target of implementation of CMS under phase-I over 40 lobbies of NR by 31 March 2007, all the lobbies were either not commissioned or were commissioned without populating referential data work during February 2008. Six lobbies did not commission/start booking of crew even by the end of July 2008. The basic reason for not achieving target of implementation was non-completion of civil/electrical/S&T (Network infrastructure) related work.
- iii. Even during the final/third phase, the target of implementation of CMS was yet to be achieved as CMS was not implemented at 16 lobbies over NR (till 31 March 2015) due to lack of connectivity, site readiness, non-availability of CMS equipment.
- iv. Over SR, no target date had been planned/fixed for full implementation of CMS.

Appendix – XXX

[Reference Para 5.5]

Statement Showing Details of Non-usage of CMS over Different Zones

- i. Over SCR, in Secunderabad lobby, Guards' were manually signing on/off their duties.
- ii. Over SR, data of 162 diesel crew of MAS lobby was not captured in CMS and their operations were not covered under CMS.
- iii. Over SER, in SRC lobby, booking of guards was being done through manual system.
- iv. Over NR, at NDLS, GZB, PNP and ANVR⁵⁵ lobbies, Guards were not using CMS for sign on/sign off purpose.
- v. Over WCR, in Beohari and Rewa lobbies, system was lying in operative due to non-availability of proper operator and defective system.
- vi. Over SR and ER, CMS lobbies at MSB (Guard lobby) and BDC were lying inoperative since their commissioning and hardware remained idle. Over ER, one set of hardware of BDC lobby was shifted to HWH lobby.
- vii. Over CR, in 12 lobbies of Mumbai Division, CMS usage was poor even after a lapse of nine years. While accepting the contention of Audit, Railway Administration stated that poor usage was due to various problems (mainly due to non-availability of slate system of booking in CMS, equipment with outlived codal life etc.).

⁵⁵ See glossary

Annexure 1

[Reference Para 1.5]

Statement Showing Names of Railway Zones, Divisions and Lobbies
Selected as Sample

Sr. No.	Names of the Railway Zones	Names of the Divisions	Names of Lobbies
1	Central Railway	Pune Division	Ghorpuri, Miraj, Pune Station, Pune Electric, Satara Kolhapur
2	East Coast Railway	Khurda Division	Khurda Road Junction Talcher Paradeep Bhadrak Palasa
3	North Central Railway	Allahabad Division	Mughalsarai Allahabad Kanpur Kanpur Marshalling Yard Tundla Chheoki (Single diesel lobby) Allahabad (Single diesel lobby)
4	North East Railway	Izzat Nagar Division	Farrukhabad Kashipur Kathgodam Gorakhpur
5	Southern Railway	Chennai Division	Chennai Central Chennai Egmore Chennai Beach Arakkonam Tiruvotriur Tambaram Jolarpettai
6	Western Railway	Ahmedabad Division	Ahmedabad Vatva Sabarmati Bhirdi Dhrangdhra Gandhidham Palanpur
7	South Eastern Railway	Kharagpur Division	Kharagpur Nimpura Santragachi Andul lobby

Sr. No.	Names of the Railway Zones	Names of the Divisions	Names of Lobbies
8	East Central Railway	Dhanbad Division	Barwadih Chandrapura Krishnashila Khalari Ray Patratu Dhanbad Gomoh
9	Eastern Railway	Howrah Division	Howrah Pakur Bardhaman Rampurhat Azimganj Katwa
10	South Central Railway	Secunderabad Division	Secunderabad Parli Vaijnath Hyderabad Kazipet Junction Sanatnagar Bhadrachalam Road Bellampalli Moula Ali Ramagundam Bidar Dornakal Junction Chittapur Motimari Manuguru Lallaguda Pandhar Pavani
11	South East Central Railway	Bilaspur Division	Bijuri Brajrajnagar Bilaspur Korba Raigarh Shahdol
12	South Western Railway	Hubli Division	Hubli, Hospet Castle rock

Sr. No.	Names of the Railway Zones	Names of the Divisions	Names of Lobbies
13	West Central Railway	Jabalpur Division	Jabalpur Junction Katni New Katni Junction Satna Saugor Beohari Rewa
14	North East Frontier Railway	Alipurduar Division	Alipurduar Junction New Coochbehar Guwahati New Guwahati Lumding
15	North Western Railway	Jaipur Division	Jaipur Phulera Bandikui Rewari
16	Northern Railway	Delhi Division	Delhi Tuglakabad Nizamuddin New Delhi Delhi Sarai Rohilla Shakurbasti Anand Vihar Rohtak Jind Jhakhhal Panipat Ghaziabad Meerut Palwal

Annexure 2
[Reference Para 2.1.1]
Statement Showing Sanctioned Strength and Men In Position
as per CMS and Manual Records

Sr. No.	Zone	Number of Lobbies Audited	Sanctioned Strength as per		Men in Position as per	
			CMS	Manual Records	CMS	Manual Records
1	CR	5	409	397	469	344
2	ER	6	2044	2826	2279	2307
3	ECoR	5	NA	3008	2278	2275
4	NR*	12	3521	4108	2972	3061
5	NFR	5	1355	1332	1449	897
6	SR	7	419	403	3204	1474
7	SECR	6	4115	3376	4012	3871
8	SWR	3	1080	1181	1046	1015
9	WCR	5	1958	991	1393	975
10	NWR	4	1157	1122	1335	1012
11	SCR	1	447#	548#	396	345
12	ECR	8	1407	673	1400	505
13	NER	4	631**	796	698	697
14	WR	7	1776	2053	1799	1853
15	SER	4	855	1476	1198	1439
16	NCR	7	5080	6211	4125	4185

*Details include Loco crew details and exclude details of NDLS Guard lobby which was not in use and guards of other lobbies. The details also exclude PWL lobby which has sanctioned strength of 8 crew and 'nil crew' as men-in-position and these details were not posted/updated in CMS

Loco Pilots of SC lobby

**Excluding FBD lobby whose data was not entered into CMS master data

Annexure 3

[Reference Para 2.1.2]

Statement Showing Results of Analysis of Profiles of Active Crew

Sr. No.	Zone	Cases where difference of more than 50 years noticed between Date of Birth and Date of Appointment	Cases where difference of less than 18 years noticed between Date of birth and Date of Appointment	Cases where same Date of Birth and Date of Appointment shown	Cases where Retirement Age Crossed
1	2	3	4	5	6
1	CR	0	32	1	34
2	ER	2	17		122
3	ECR#	7	66		12
4	ECoR	0	0	0	1
5	NR	12	79	1	142
6	NCR	0	0	0	28
7	NER	0	28	0	10
8	NFR	0	8	1	35
9	NWR	8	11	0	1
10	SCR	0	104	0	38
11	SECR	5	15	1	7
12	SER	1	26	0	175
13	SWR	0	0	0	7
14	WR	0	23	1	83
15	WCR	3	44	1	17
16	SR	0	30	1	0
	Total	38	483	6	712

#Difference is more than 38 years

Annexure 4

[Reference Para 2.1.3]

Statement Showing Number of Blank Records of Active Crew

Sr. No.	Field Name	Number of Blank Records of Active Crew																
		CR	ER	ECR	ECoR	NR	NCR	NER	NFR	NWR	SR	SCR	SECR	SER	SWR	WR	WCR	Total
1	Blood Group	1790	2566	468	447	6134	2424	1320	320	984	884	3262	1940	1972	431	2393	948	28283
2	Mobile Number and Personal Mobile Number	640	1421	105	78	1227	5474	249	2227	1312	4434	453	248	721	59	11330	3471	33449
3	Service PNT Number	6782	6983	2238	2145	9915	5631	-	2653	914	5081	8287	5963	7325	954	6370	0	71241
4	Railway Number	7319	6487	2269	2262	10506	5982		2872	1267	3027	8384	5769	7669	977	6913	2630	74333
5	Last Promotion Date	817	1146	167	132	412	1030	127	105	51	692	349	358	1140	147	1061	197	7931
6	Call Serve Address	1542	46	26	1	134	1041	918	2	1335	138	3753	434	33	-	42	0	9445
7	Permanent Address	4157	3535	752	270	3944	1804	716	954	331	1649	4881	2088	3033	635	2293	0	31042
8	Alcohol	245	155	-	2	431	195	12	13	14	152	39	5	327	1	15	0	1606
9	Increment Due Date/Last Increment Date	237	60	5	24	183	-	-	30	1174	591	213	65	727	47	338	30	3724
10	Traction	2155	2022	591	537	2567	1458	604	954	367	1213	28	23	2066	277	2455	0	17317
11	Marital Status	2107	2458	518	219	2799	1358	582	658	179	1283	3427	1445	1939	410	1417	374	21173
12	Loco Inspector Name or LI Code (For Designation Loco)	384	3728	1239	997	463	1850	1305	1393	870	681	6180	2150	1895	13	-	673	23821
13	Identification Mark	7286	6790	1873	2185	10577	4977	1992	2679	1267	3091	8217	6409	7337	910	6976	1903	74469
14	Initial Medical Date	7659	7324	2201	2210	10666	5806	2268	2824	1303	3177	9210	6689	7712	935	7432	1927	79343
15	Bill Unit Number	7634	7130	2214	1079	11116	4690	2219	2753	818	3037	9257	6589	6398	1040	7226	1986	75186
16	Aadhar Number	6196	4969	2284	2276	8727	3644	2403	2955	1326	2761	6368	6801	5196	1042	7501	1581	66030

Annexure 4 (Contd.....)

[Reference Para 2.1.3]

Statement Showing Number of Blank Records of Active Crew

Sr. No.	Field Name	Number of Blank Records of Active Crew																
		CR	ER	ECR	ECoR	NR	NCR	NER	NFR	NWR	SR	SCR	SECR	SER	SWR	WR	WCR	Total
17	PAN Number	7565	7051	2164	2244	10892	5169	2278	2823	984	3195	9472	6643	7719	1039	7336	1955	78529
18	PF Number	101	342	10	67	2756	75	251	135	167	134	102	84	440	0	209	5	4878
19	Seniority	7501	6793	2275	2270	10858	6123	2389	2645	855	3190	9171	6766	7760	1039	6683	1524	77842
20	Appointment Date	65	67	5	-	79	33	10	22	3	51	129	22	28	9	46	0	569
21	Railway Quarter	245	149	-	2	398	158	12	13	13	-	-	5	327	1	10	0	1333
22	Education Qualification "select"	436	611	78	37	236	103	93	46	60	551	504	180	290	49	237	72	3583
23	Appointment Post "Select"	1265	2033	193	550	505	847	265	307	97	1239	1339	1020	1528	48	1246	323	12805
	Total	74128	73866	21675	20034	105525	59872	20013	29383	15691	40251	93025	61696	73582	10063	79529	19599	797932

Annexure 5

[Reference Para 2.1.4]

Statement Showing Details of Incorrect/Invalid Data for Different Fields

Sr. No.	Zone	Availability Date	Increment Date	Basic Pay	Officiating Date	PF Number
1	CR	0	5560	567	7438	848
2	ER	13	3855	460	7273	395
3	ECR	3	2034	479	2126	0
4	ECoR	0	2	0	2171	28
5	NR*	87	5885	492	10076	1796
6	NCR	0	520	0	12106	38
7	NER	10	720	37	2097	48
8	NFR	9	2402	90	2735	388
9	NWR	17	104	19	1277	167
10	SR	0	0	0	2302	0
11	SCR	86	213	503	8709	207
12	SECR**	33	5905	-	6574	37
13	SER	9	3957	916	7795	557
14	SWR	9	200	52	948	12
15	WR	4	338	0	7156	209
16	WCR	0	30	0	3046	80
	Total	280	31725	3615	83829	4810

**37 Cases of duplicate PF Numbers. *Increment due date either zero or prior to 30 June 2014

Annexure 6
[Reference Para 2.1.5]

Statement Showing Reason-wise Analysis of Inactive Status of Crew

Sr. No.	Zone	Reasons for Inactive Status		
		Select	Superannuation#	Others
1	CR	88	231	962
2	ER	16	284	645
3	ECR	18	32	267
4	NR	57	54	1080
5	NER	4	101	124
6	NFR	40	250	230
7	NWR	10	19	53
8	SR	-	218	-
9	SCR	103	99	1006
10	SER	26	171	581
11	SECR	18	249	391
12	SWR	10	134	100
13	WCR	12	143	133
14	ECoR	9	184	160
15	WR	73	41	732
16	NCR	78	129	466
	Total	474	2339	5968
				6442
#Cases where crew did not attain superannuation age				Others + Select

Annexure 7

[Reference Para 2.1.6]

Statement Showing Number of Cases of Family Particulars

Sr. No.	Zone	Total Crew	Total Crew Members having Dependent Family Members	Cases where Family Particulars available in CMS	Cases where Family Particulars not available in CMS
1	CR	7840	4565	118	4447
2	ECR	2305	1411	143	1268
3	NR	11437	5446	36	5410
4	NER	2404	1544	7	1537
5	NWR	1335	963	1	962
6	SECR	6808	3514	21	3493
7	SER	7795	4068	11	4057
8	WR	7596	7596	187	7409
9	ER	7520	3497	34	3463
10	NFR	2960	2960	5	2955
11	SR	3204	1595	126	1469
12	SWR	1046	338	3	335
13	WCR	1505	1075	754	321
14	ECoR	2278	2278	2	2276
15	NCR	4267	2640	661	1979
	Total	70300	43490	2109	41381

Annexure 8
[Reference Para 2.1.7]

Statement Showing Loco Holdings Position in CMS *vis-a-vis* Manual Records

Sr. No.	Zone	Electric Shed as per		Electric Locos as per		Diesel Shed as per		Diesel Locos as per	
		CMS	Manual Record	CMS	Manual Record	CMS	Manual Record	CMS	Manual Record
1	ER	6	3	286	248	7	4	513	360
2	ECoR	2	2	277	321	1	1	258	212
3	NR	3	3	398	361	6	4	748	561
4	NCR	N	-	337	403	-	-	162	140
5	NER	N	-	-	-	2	2	364	245
6	NFR	N	-	-	-	3	3	258	364
7	SECR	2	1	281	209	1	1	154	142
8	SER	6	4	535	562	4	3	418	260
9	SWR#	N	-	-	-	3	2	389	320
10	CR	3	3	583	604	3	3	374	315
11	SCR	8	3	538	545	NA	NA	NA	NA
12	SR	3	3	367	421	5	4	473	403
13	WCR	3	3	477	580	2	2	501	367
14	WR	2	2	328	346	5	7	570	570
	Total	38	27	4407	4600	42	36	5182	4259

#Over SWR, in addition to 389 Diesel BG locos, CMS data base contains 13 MG Diesel locos which are not actually available on ground.

Annexure 9

[Reference Para 2.1.8]

Statement Showing Details of Non-availability/Incorrect Data of
Zone/Divisional Codes/Stations in CMS

Sr. No.	Zonal Railway	Details not available in CMS			
		Zonal/Divisional Code*	Stations	In correct Station Code	Routes not Created
1	2	3	4	5	6
1	ER	257	148	1	4
2	NFR	-	-	36	-
3	NWR	-	17	-	-
4	CR	0	0	0	8
5	ECR	-	-	-	2
6	ECoR	0	0	0	127
7	SECR	-	53	-	-
8	NER	0	6	-	-
9	SWR	-	2	3	-
10	SCR	-	-	3	17
11	SER	0	0	0	1
	Total	257	226	43	159

*The figure does not pertain to any specific zone/division.

Annexure 9 (Contd..)
[Reference Para 2.1.8]

Differences in Distances Recorded in Working Time Table, CMS and RBS

Sr. No.	Pair of Stations	Route Number	KMs as per RBS	KM as shown in CMS	Difference between RBS & CMS	Kms as per Working Time Table	Difference between CMS & WTT
1	HWH-ASN	3034	199.8	202.8	3	199.79	3.01
2	RPH-HWH	3059	206.3	222.25	15.95	218.62	3.63
3	HWH-SBG	3045	339.9	340.93	1.03	339.89	1.04
4	HWH-SBG	3163	339.9	353.3	13.4	352.22	1.08
5	SBG-HWH	3130	339.9	341.45	1.55	339.89	1.56
6	SBG-HWH	2915	339.9	351.81	11.91	352.22	-0.41
7	HWH-RPH-HWH	10390	412.6	416	3.4	412.58	3.42
8	HWH-BHP-HWH	10140	291.62	334	42.38	331.26	2.74
9	HWH-BHP-HWH	6941	291.62	310	18.38	306.7	3.3
10	HWH-AZ	3042	216.73	219.08	2.35	216.73	2.35
11	AZ-HWH	4396	275.04	279.38	4.34	277.86	1.52
12	AZ-HWH	3086	216.73	219.11	2.38	219.77	-0.66
13	HWH-UDL-RPH	3169	275.3	291.22	15.92	287.62	3.6
14	RPH-UDL-HWH	3061	275.3	291.22	15.92	287.62	3.6
15	HWH-DHN	3034	258.57	261.56	2.99	258.55	3.01
16	DHN-HWH	2893	258.57	261.08	2.51	258.55	2.53
17	BWN-GMO	3054	193.43	251.3	57.87	194	57.3
18	PRLI-UKH	4698	11.10	9.04	-2.06	11.10	-2.06
19	PAU-MRV	4698	9.88	10.04	0.16	9.88	0.16
20	MRV-PPLC	4698	6.89	6.81	-0.08	6.89	-0.08
21	PPLC-BMF	4698	5.55	5.73	0.18	5.54	0.19
22	SIF-BLC	4698	8.11	3.57	-4.54	8.11	-4.54
23	AK-JUK	4697	56.28	10.20	-46.08	58.84	-48.64
24	HNL-DNE	4697	9.36	9.52	0.16	9.36	0.16
25	JUNX-CWI	4697	5.05	5.19	0.14	5.04	0.15
26	KNRG-KKG	5098	11.16	11.02	-0.14	11.16	-0.14
27	WHM-KXX	5098	11.16	10.49	-0.67	10.19	0.30
28	CNBI-TDL	12251	5.32	3.92	1.40	232.68	-228.76
29	SBB-CNB	12432	236.52	6.72	229.80	415.48	-408.76

WTT= Working Time Table

Annexure 10
[Reference Para 2.1.9]

Statement Showing Booking of Crew Using Fetch All Option Rather Than Fetch Crew as Per Rule Option

Sr. No.	Zone	Finalised Transactions	Booked using Fetch All Option(In violation of rules**)	No reason	Garbage/Misc *
1	CR	419565	280717	-	-
2	ER	227849	227710	-	-
3	ECR	73320	67342	-	-
4	NR	391880	120457	4919	115538
5	NCR	68207	35500	-	-
6	NER	119344	89123	-	-
7	NFR	110663	110660	5692	104968
8	NWR	73031	73031	72932	99
9	SR	22314	20222	-	-
10	SCR	222603	92519	1120	91399
11	SECR	336125	311388	-	-
12	SWR	28324	28165	-	-
13	WR	368544	301345	-	-
14	ECoR	NA	87610	18542	-
15	WCR	514	250	-	-
16	SER	250749	250648	48239	202409
	Total	2713032	2009077#	145752	534635
**As per Book_Rule field value=WoR			74.05		
*Over NR, 115538 records contained 8353 types of reasons for using Fetch All Option #Excluding ECoR figure of 87610					

Annexure 11

[Reference Para 2.1.10]

Statement Showing Difference Between Train Ordering Time and Crew Call Time

Sr. No.	Zone	Difference between Train Ordering Time and Crew Call Time									Remarks
		Call made after Train Ordering Time (1 to 359 minutes)		Call made between 0 to 129 minutes before Train Ordering Time		Call made between 130 to 165 minutes before Train Ordering Time		Call made beyond 165 minutes before Train Ordering Time and upto 171 hours			
		Freight	Other Than Freight	Freight	Other Than Freight	Freight	Other Than Freight	Freight	Other Than Freight	Total (Col. 9+10)	
1	2	3	4	5	6	7	8	9	10	11	12
1	CR	33898	2409	18327	2006	2733	139	12838	264	13102	-
2	ER	14788	2667	97033	35864	7292	7215	23618	36830	60448	171 Hrs
3	ECR	1412	184	51986	9229	6315	1856	2879	6780	9659	30 Hrs
4	ECoR	582	117	53362	7067	13080	3386	2031	7982	10013	171 Hrs
5	NR	20548	8285	144784	67600	4989	13180	12385	120109	132494	171 Hrs
6	NFR	2809	1678	45831	33558	2327	5212	1859	17389	19248	1770Mts
7	NWR	991	446	34242	15677	2070	3729	575	15301	15876	171Hrs
8	SECR	6183	2296	202355	36023	43045	10168	5275	26217	31492	170Hrs
9	SER	2413	776	120827	25996	40277	7896	8029	44535	52564	171Hrs
10	SWR	821	144	14181	1730	2312	463	266	8407	8673	171Hrs
11	WR	5760	2008	139379	34303	29582	7607	14668	104185	118853	-
12	NER	1026	1916	13831	20957	2240	3379	668	20845	21513	-
13	SCR	29221	7484	91692	48530	1156	4698	2265	37557	39822	171Hrs
14	WCR	5042	2739	117714	59148	23634	13729	1290	1773	3063	-
15	SR	1527	1136	7766	4780	64	944	618	12529	13147	NA
16	NCR	10149	1856	30154	11739	3028	1690	2893	6698	9591	25 Hours
	Total	137170	36141	1183464	414207	184144	85291	92157	467401	559558	-
	Grand Total		173311						559558	2599975	

Annexure 12

[Reference Para 2.1.11]

Statement Showing Difference Between Call Time and Call Received/Acknowledged Time

Sr. No.	Zone	Difference between Crew Call Time and call Acknowledged Time											Ranged upto for Col. No. 11 & 12
		Call Received/Acknowledged before Call Made		Call Received/Acknowledged immediately (Call Time and Acknowledged Time same)		Call Received/Acknowledged between 1 minute to 30 minutes of Call Time		Call Received/Acknowledged between 31 to 165 minutes from call time		Call Received/Acknowledged beyond 165 minutes of call made			
		Freight	Other Than Freight	Freight	Other Than Freight	Freight	Other Than Freight	Freight	Other Than Freight	Freight	Other Than Freight	Total (Col.10+11)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	CR	0	0	69155	23637	42216	17287	25076	8892	3855	4743	8598	1499 hrs
2	ER	0	0	49177	22467	61177	25349	20590	16514	14030	18545	32575	1499Hrs
3	ECR	0	0	24743	6080	29528	7023	7416	2562	905	2384	3289	87 Hrs
4	ECoR	0	0	23269	3870	0	4511	16357	7295	29432	2874	32306	1499Hrs
5	NR	0	1	68612	33789	53951	29498	48363	46880	11704	98969	110673	1499Hrs
6	NFR	0	0	19759	16736	14047	11964	17093	17063	1927	12074	14001	4225Hrs
7	NWR	0	0	14363	7523	8197	6684	14770	10733	547	10210	10757	3240Hrs
8	SECR	0	0	49124	20132	93185	20483	110640	20355	3909	13734	17643	49 Hrs
9	SER	1	0	34988	12124	53278	18519	80719	21312	2531	27237	29768	*51 hours to 1499 Hrs 166 min.
10	SWR	0	0	7202	2373	5150	7164	3611	458	1617	749	2366	21Hrs
11	WR	0	0	64628	26756	41414	31708	74789	25201	8036	64218	72254	-
12	NER	0	0	7895	10286	1703	3720	6092	12031	375	17882	18257	-
13	SCR	0	0	58478	35602	33192	0	25911	9191	6752	24366	31118	22101Hrs
14	WCR	0	0	28260	20298	27570	16318	92998	48234	4502	42094	46596	*****
15	SR	0	0	6129	8083	2573	8318	1028	1354	351	1586	1937	-
16	NCR	0	0	17163	5596	11166	3063	15251	6789	2644	6535	9179	136 hours
	Total	1	1	542945	255352	478347	211609	560704	254864	93117	348200	441317	-
	G. Total		2				1488253				441317	2745140	

* Combine figure for freight & other

Annexure 13

[Reference Para - 2.1.12]

Statement Showing Difference Between Crew Sign on Time & Train Ordering Time

Difference Between Crew Sign on Time & Train Ordering Time

Sr. No.	Zone	Difference Between Crew Sign on Time & Train Ordering Time										
		Crew Signed on After Train Ordering Time (1 minute to 1461 hours)		Crew Signed on within 1 to 9 minutes before Train Ordering Time*		Crew Signed on between 10 to 45 minutes before Train Ordering Time		Crew Signed on beyond 45 minutes and upto 165 minutes before Train Ordering Time		Crew Signed on beyond 165 minutes before Train Ordering Time		
		Freight	Other Than Freight	Freight	Other Than Freight	Freight	Other Than Freight	Freight	Other Than Freight	Freight	Other Than Freight	Total (Col. 11+12)
1	2	3	4	5	6	7	8	9	10	11	12	13
1	CR	93792	29882	4247	1096	27694	16728	4456	3033	7568	3026	10594
2	ER	18817	4235	8692	1746	78470	64097	18099	6587	9216	4913	14129
3	ECR	2436	599	2387	425	51563	16125	2701	384	3505	516	4021
4	ECoR	20685	5073	8	1	632	0	2173	0	45559	13478	59037
5	NR	38890	31095	27418	12521	77205	129941	17233	24187	21926	11400	33326
6	NFR	5099	3857	4402	2648	36359	40423	4084	8990	2880	1915	4795
7	NWR	33180	32257	2201	802	1709	885	708	822	71	384	455
8	SECR#	13506	1827	105279	25267	129118	39046	4372	5473	8736	3501	12237
9	SWR	5104	3465	401	24	4711	455	539	58	1934	532	2466
10	SCR	29221	7484	37647	15866	31792	17015	23409	20347	2264	37557	39821
11	SR	4988	9864	298	79	208	55	59	10	11	-	11
12	WCR	131720	105748	7912	6211	9050	7221	3883	6304	767	1461	2228
13	NER	4708	10871	4670	4639	22160	49331	615	757	1118	1301	2419
14	SER	8872	2826	11419	2979	140905	70556	7294	1976	3056	866	3922
15	WR	18759	17648	24479	16281	133897	97144	3276	10136	4822	3666	8488
16	NCR	18397	9608	4962	1646	15072	8871	2706	538	5087	1320	6407
	Total	448174	276339	246422	92231	760545	557893	95607	89602	118520	85836	204356
	Grand Total	724513			338653							2771169

*For NR, it is within 0 to 9 minutes

For SECR - Col. 3 & Col. 4 range 1 mts. to 41 hrs., Col.5 & 6 -range 0 to 29 mts., Cols. 7 & 8 - range 30-45 mts.

Annexure 14
[Reference Para - 2.1.13]

Statement Showing Difference Between Crew Sign on Time and Supervisory Sign on Approval Time

Sr. No.	Zone	Difference Between Crew Sign on Time and Supervisory Sign on Approval Time							
		Supervisor approved Crew Sign on before Crew Sign on Time (Difference 1 minute to 28 minutes)		Supervisor approved Crew Sign on immediately/within 30 minutes of Crew Sign on (Difference 0 minute to 30 minutes)		Supervisor approved Crew Sign on after Crew Sign on with a time difference of 30 minutes to 452 hours)			Ranged upto for Co. No. 7 & 8
		Freight	Other Than Freight	Freight	Other Than Freight	Freight	Other Than Freight	Total (Col. 7+8)	
1	2	3	4	5	6	7	8	9	10
1	CR	435	-	94802	-	147623	-	147623	Combined. Col. 7 & 8 upto 1252 hrs
2	ER	27	50	45716	27741	91999	55106	147105	876Hrs
3	ECR	3	1	16900	5817	45687	12231	57918	44409 Mts.
4	ECoR	11	0	24121	5629	44925	12923	57848	876Hrs
5	NR	23	129	42771	76095	139878	132920	272798	31 minutes to 876 Hrs
6	NFR	6	13	16696	17580	36121	40241	76362	52575Mts
7	NWR	24	27	16816	12313	20941	22666	43607	333Hrs
8	SECR**	41	35	96616	27992	160172	46673	206845	31 minutes to 1180Hrs
9	SWR	1	4	3761	3132	13817	7606	21423	452Hrs
10	SCR	7	48	32130	28801	92096	69355	161451	1016Hrs
11	SER	42	20	45083	24665	126421	180939	307360	31 minutes to 888 hrs.
12	SR	8	73	3406	12762	7181	15822	23003	
13	WCR	94	91	64911	48383	86041	76519	162560	*****
14	WR	43	72	63159	52570	124697	94279	218976	-
15	NER	13	18	8173	17361	26682	50268	76950	-
16	NCR	47	19	22451	14634	78682	35974	114656	Upto 701 hours
	Total	825	600	597512	375475	1242963	853522	2096485	-
	Grand Total		1425				2096485	3070897	
**For column 2 and 3, values are in the range of 1 to 9.									

Annexure 15

[Reference Para 2.1.14]

Statement Showing Difference Between Crew Sign off Time and Supervisory Sign off Approval Time

Sr. No.	Zone	Difference Between Crew Sign off Time and Supervisory Sign off Approval Time							
		Supervisory Crew Sign off approval before Crew Sign off Time (Difference 0 minute and upto 7 minutes)\$		Supervisory Sign off approval within 1 minute to 60 minutes after Crew Sign off*		Supervisor Sign off approval beyond 60 minutes after Crew Sign off			Ranged upto for Col. No. 7 & 8
		Freight	Other Than Freight	Freight	Other Than Freight	Freight	Other Than Freight	Total (Col. 7+8)	
1	2	3	4	5	6	7	8	9	10
1	CR	5412	-	86723	-	60961	-	60961	1207 hrs
2	ER	69705	37386	34500	17646	24602	24262	48864	815Hrs
3	ECR	285	224	3672	3042	4838	3544	8382	3063 Mts
4	ECoR	1643	242	11114	2027	5621	2352	7973	815Hrs
5	NR	499	1591	16272	46414	19983	52305	72288	Beyond 60 minutes to 815Hrs
6	NFR	300	506	9530	13645	13789	19372	33161	42113Mts
7	NWR	654	742	6999	11212	4995	11640	16635	433Hrs
8	SECR	1798	1025	40651	21036	36201	22520	58721	293Hrs
9	SWR	0	112	4	2133	29	1004	1033	51Hrs
10	SCR	376	742	93120	49939	19884	40676	60560	1028Hrs
11	SR	94	470	623*	0	1343	8131	9474	
12	WCR	4197	3501	92648	76470	26033	37517	63550	*****
13	WR	2350	3253	47286	58655	50772	43096	93868	
14	SER	793	440	17503	17727	11940	24229	36169	61 Minutes to 28 hours
15	NCR	3322	1400	72463	33296	25395	15931	41326	Upto 1369 hours
	Total	91428	51634	533108	353242	306386	306579	612965	
	G.Total		143062				612965	1642377	
	\$For NR, it is in the range of 1 minute to 5 minutes and for SECR, it is in the range of 1 to 7 minutes								
	*For NR, it is 0 minute to 60 minutes								

*Due to blank service type field in 623 records, all entries shown under Freight

Annexure 16

[Reference Para -2.1.15]

Statement Showing Difference Between Crew Sign on and Crew Sign off Time

Sr. No.	Zone	Difference Between Crew Sign on and Crew Signed off Time									Ranged upto for Col. No. 9 & 10
		Crew Sign on and Crew Sign off time same		Crew Sign on and Crew Sign off time between 1 minute to 10 hours)		Crew Sign on and Crew Sign off time between 10 hours to 20 hours*		Crew Sign on and Crew Sign off time beyond 20 hours			
		Freight	Other Than Freight	Freight	Other Than Freight	Freight	Other Than Freight	Freight	Other Than Freight	Total (Col. 9+10)	
1	2	3	4	5	6	7	8	9	10	11	12
1	ER	10	3	4409	43972	30638	1933	2664	653	3317	1559Hrs
2	ECR	0	1	8641	7971	8643	786	2436	551	2987	446 Hrs
3	ECoR	0	0	10703	4947	26641	122	1212	7	1219	1559Hrs
4	NR	22	14	27422	95984	8215	2926	1095	1386	2481	1559Hrs
5	NFR	30	10	15520	32406	7707	918	363	188	551	1559Hrs
6	NWR	0	0	9222	23956	4073	165	27	29	56	1559Hrs
7	SECR	10	6	50874	43632	27382	908	384	35	419	429Hrs
8	SWR	0	0	43	3377	26	62	64	8	72	82Hrs
9	SCR	5	4	20687	60401	14153	2498	3239	2922	6161	878Hrs
10	SR	2	2	1909	15723	1071	357	51	47	98	-
11	CR	11	6	25885	58696	10971	2111	631	2875	3506	1267Hrs
12	WCR	2	3	64883	98738	39028	3808	5744	2696	8440	-
13	WR	2	7	67410	108075	39042	1181	611	237	848	-
14	SER	0	0	29597	51251	23982	2596	5029	1696	6725	20 Hrs. to 1080hours
15	NCR	8	2	25238	22268	27669	5607	1336	325	1661	1369 hours
	Total	102	58	362443	671397	269241	25978	24886	13655	38541	-
	*For NR, it is beyond 600 minutes to 20 hours									1367760	

Annexure 17
[Reference Para 2.2.1]

Statement Showing Position of SMS During 5th September 2014 to 5th December 2014

Sr. No.	Zone	Types of SMS			Miscellaneous					
		Sent	Received	Pending	Sign on Transactions	Active crew	Active crew having CUG status shown as blank	Mobile status as 'Y' but mobile No. shown as 0	Lobbies Not using SMS	No. of Sent Transactions
1	2	3	4	5	6	7	8	9	10	11
1	CR	53551	7120	22992	231403	7840	6236	69	7	53551
2	ER	92328	9322	62998	NA	7520	7298	1380	-	-
3	ECR	16702	714	7134	-	-	-	-	-	-
4	ECoR	16663	3738	12925	NA	NA	NA	939	-	-
5	NR	34139	3102	42406	404954		10037	1227	4	34139
6	NCR	20097	1916	14970	-	-	-	786	-	-
7	NER	6667	0	14591	-	-	-	1562	1	-
8	NFR	5649	192	11242	-	2960	2937	411	5	-
9	NWR	11409	183	10715	22307	1244	0	0	0	11409
10	SR	NA	NA	NA	-	-	45	6451	-	-
11	SCR	71584	0	34037	407538	9696	9488	25	10	71584
12	SECR	131847	0	29916		-	-	248	-	-
13	SER	101139	11591	35702	-	6055	Nil	Nil	4	-
14	SWR	9222	113	2256	-	1046	1037	2	0	-
15	WR	65411	30138	33887	-	7596	7498	383	7	-
16	WCR	7671	325	13988	NA	3046	486	500	5	-
	Total	644079	68454	349759	1066202	47003	45062	13983	43	170683
			10.63	54.30						16.0085

Annexure 18
[Reference Para 2.3.1]

Statement Showing Reason-wise Position for Non-generation of Mileage Report through CMS

Reasons	Railways													
Either crew sign on or off is manual in the register because of non working of CMS at the location/other operational reasons or non availability of CMS at that location.	CR	SR	WR	ECR	WCR	NR	SWR	SCR	ER	SER	ECoR	NFR	SECR	NCR
Details of leave have not been entered in CMS.	CR	-	-	-	WCR	NR	SWR	SCR	ER	-	-	-	-	-
Non-definition/incorrect definition of routes and distance in CMS.	CR	-	-	ECR	WCR	-	-	SCR	ER	-	-	-	-	-
Data Entry Errors /Wrong sign on/off time	CR	SR	-	-	WCR	NR	SWR	SCR	ER	-	-	-	SECR	-
Missing transactions (due to CMS failures/non-updation)/Delay in updation	CR	SR	-	-	WCR	NR	-	-	-	SER	ECoR	-	-	NCR

Annexure 19

Statement Showing Review of Route Learning Data - Details of Cases where LR Due Date not Computed Correctly
[Reference Para 2.4.1]

Zonal Railway Name	Cases where LR trips due were zero							Cases where LR trips due were more than zero and LR Due date had not expired (beyond 5 December 2014)					Cases where LR Due date expired but computed after a period of 3 months	Difference in Days (For Column No. 14)
	Cases having LR Due Date prior to Last Drive Date	Difference in days (For Column 2)	Cases having Last Drive Date and LR Due Date same	Cases having LR Due Date greater than Last Drive Date but difference less than 89 days (3 months)	Difference in Days (For column 5)	Cases having difference between Last Drive Date and LR Due date more than 92 days	Difference in Days (For column 7)	Cases where difference between Last Drive Date and LR Due Date less than 89 days (3 months)	Difference in Days (For Column No. 9)	Cases where CMS computed LR Due Date for a period of 3 months	Cases where CMS computed LR Due Date after a period of 3 months	Difference in Days (For Column No. 12)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
NR	23850	1-1905	16656	992	-	70840	149-184	27723	1-88	600	183	95-180	115	183-184
CR	308	2-819	233	8	-	-	-	1283	1-88	29	-	-	-	-
SWR	3	upto 761 days	1	17	1-84	0	-	110	1-88	11336	0	-	28	182
ER	58	5-916	40	2	85-87	89171	181-184	263	1-88	983	13	99-163	25	183-184
SCR	265	1-828	128	10	5-81	5254	181-184	0	-	0	-	0	2	182
NCR	37	1-723	36	1	87	-	-	-	-	-	-	-	-	-
NWR	0	0	2	0	-	-	-	-	-	-	-	-	-	-
WCR	1316	1-1662	1663	20	6-84	0	0	20	6-84	188	0	-	-	-
ECR	11159	1-1035	6150	-	-	2325	181-184	-	-	-	-	-	-	-
ECoR	61137	213-233	-	-	-	4765	-	-	-	-	-	-	-	-
SER	70	1-195	153	3	-	40607	181-184	-	-	-	-	-	-	-
SR	46367	1-367	67942	1260	1-85	21892	-	-	-	2802	58	95-180	-	-
NER	5	114-867	7	0	0	119	181-184	-	-	-	-	-	-	-
SECR	46	1-876	27	2174	1-180	-	-	-	-	-	-	-	-	-
NFR	8173	1-1843	-	-	-	1172	183-184	-	-	-	1	-	2597	-
WR	470	2-877	99	16	43-88	-	-	164	1-88	17	-	-	-	-
Total	153264		93137	4503		236145		29563		15955	255		2767	

Annexure 20

[Reference Para 2.4.7]

Statement Showing Position of Grading Done by Loco Inspector

Sr. No.	Zonal Railway	Number of Active Loco pilots Analysed	Active Loco Pilots graded by LI at prescribed interval	Active loco pilots Not graded by LI at prescribed interval	% of Active Loco Pilot not graded
1	CR	2325	1920	405	17.42
2	ER	3596	1881	1715	47.69
3	SWR	1046	300	746	71.32
4	SECR	3618	2625	993	27.45
5	NR	2581	1855	726	28.18
6	ECR	2305	922	1383	60.00
7	SR	986	824	162	16.43
8	NFR	2960	2518	442	14.93
9	NWR	1217	1119	98	8.05
10	SCR	3022	2694	328	10.85
11	SER	659	275	384	58.27
12	NER	374	297	77	20.59
13	WR	3483	2222	1261	36.20
14	WCR	7213	7050	163	2.25
15	ECoR	2177	1630	547	25.13
16	NCR	128	122	6	4.69
	Total	37690	28254	9436	33.39

Annexure 21
[Reference Para 2.4.8]

Statement Showing Counselling Details of Crew

Category	Name of the Zones/Divisions and Number of Crew Analysed					Results		
	NR	Delhi Division	NFR	APDJ Division	Jaipur Division	NR*	NFR	NWR
'A'	1298	541	366	83	4201	Counselling due date of 276 (21%) crew had expired by a period of more than 60 days to 1602 days, 170 (31%) pertained to Delhi Division. Counselling due date of 215 (16%) crew had expired by more than 90 days.	Counselling due date of 322 (87.97%) Crew members had expired by a period of more than 60 days to 1887 days.	NIL
'B'	865	224	109	24	5046	Counselling due date of 258 (29%) Crew Members was more than 30 to 1517 days old, 75 (33%) pertained to Delhi Division Counselling due date of 160 (18%) crew had expired by more than 60 days.	Counselling due date of 99 (90.82%) crew was more than 30 to 1242 days old.	Counselling due date of 391 (7.75%) Crew Members was more than 60 days
'C'	643	262	71	27	870	Counselling due date of 268 (42%) Crew Members was more than 30 to 1492 days old, 129 (49%) pertained to Delhi Division	Counselling due date of 60 (84.50%) Crew Members was more than 30 to 1051 days old.	Counselling due date of 260 (29.89%) Crew Members was more than 30 to 60 days old
'D'	4	0	-	-	19	Counselling due date of 2 Crew was 73 to 106 days old	-	Counselling due date of 12 Crew was 15 to 30 days old

*Even after taking into consideration period for data updation by Loco Inspector in CMS, number of non-counselling cases were almost within the same range.

Annexure 22

[Reference Para 2.4.9]

Statement Showing Status of Crew Who Have Taken Quiz

Sr. No.	Zonal Railway	No. of Active Crew	Crew taken online Quiz	Percentage
1	CR	7840	2358	30.08
2	SWR	1046	68	6.50
3	NFR	907	472	52.04
4	NR*	3766	168	4.46
5	ECR	2305	655	28.42
6	ECoR	2278	823	36.13
7	SR	2930	574	19.59
8	ER	7520	1909	25.39
9	NWR	1335	1012	75.81
10	SCR	9696	2815	29.03
11	WCR	699	472	67.52
12	WR	7596	2361	31.08
13	NER	2404	759	31.57
14	SECR**	6808	441	6.48
15	SER	2342	592	25.28
16	NCR	4257	922	21.65
	Total	63729	16401	25.74

*Pertaining to Delhi Division Crew

**Crew play dates are between march 2014 to 5 Dec, 2014

Annexure 23
[Reference Para 2.4.10]

Statement Showing Results of Data Analysis of Breath Analyzer Test

Value/ Contents of Breath Sign on field	Breath Sign On								Remarks
	(No. of Records)								
	CR	NR	SCR	SER	WCR	SECR	NCR	TOTAL	
N	174	9	24	24	1	13	1	246	Records indicate that Breath sign on has not been done/approved by the Supervisor but Crew Sign on has been approved by the Supervisor

Annexure 24

[Reference Para 2.5.1]

**Statement Showing Mileage Allowance Charged by CMS
for Performing Non-running Duties at Headquarters**

Name of the Railway	No. of Lobbies	No. of Types of Non-running duties configured for Mileage Allowance at Headquarters	Mileage Allowance (In kms.) for zonal railway	Approx. value of Mileage Allowance (₹)	Mileage Allowance (in kms.) pertaining to Sample division*
CR	35	1-61	1735440	3952000	50400
ER	17	1-100	1713263	3700000	126802
ECoR	11	1-64	116800	3313634	84840
NR	45	1-64	2060560	4358512	199120
NWR	21	1-91	2977160	6311579	462760
SCR	38	1-38	3636680	7621299	404320
SECR	18	1-57	3044200	6500809	2053000
WCR	16	1-48	2327120	5270775.80	1000622.60
WR	27	1-28	29800	66603	8200
NCR	15	1-71	3495776	7411045	917000
Total			21136799	48506256.8	5307064.6

*Names of the sample divisions are given in Annexure A

Annexure 25

[Reference Para 2.5.2]

Statement Showing Admissible Kilometrage Configured in CMS by IR Lobbies

Railway Name	Lobby Name/Crew's Headquarters	Location of Training/Non-running duties	Admissible Kms. (To and fro)	Remarks
CR	KOP	MRJ	320	Admissible Kms. rates are for single side
	MRJ	KOP	160	
	CLA	CSTM	18	
	CSTM	CLS	160	
	CSTM	KYN	160	
	KYN	CSTM	57	
NR	DEE	Baroda House	160x2=320	Distance between SSB and Baroda House is much more than distance between DEE and Baroda House. (Both SSB and DEE stations are located at Delhi).
	SSB	Baroda House	0	
	SSB	ROK	80x2=160	Kms. are admissible to Crew posted at SSB but not to a Crew posted at ROK
	ROK	SSB	0	
	TKD	SNP	62x2=124	Panipat is far away from TKD than Sonipat but nothing is payable for performing non-running duties at Panipat.
	TKD	PNP	0	
	GZB	UMB	0	If a Crew's Hq. is Ambala, he gets 436 Kms. for attending training/non-running duties but a Crew having Hqrs. at GZB gets nothing for non-running duties at Ambala
	UMB	GZB	218x2=436	
	KLK	CDG	160x2=320	Jind is far away from CDG than Kalka but Crew at Jind gets nothing.
	Jind	CDG	0	
	DEE	CNB	160x2=320	Delhi, DEE, NZM, NDLS lobbies are at Delhi but Kms. are different for same station of Non-running duties.
	DLI	CNB	221x2=442	
	NZM	CH	80x2=160	
	NDLS	CH	160x2=320	
	DLI	CH	102x2=204	
	FZR	LDH	160x2=320	
GZB	LDH	80x2=160	GZB is farthest from LDH than FZR but mileage is more to Crew of FZR Lobby than that of GZB lobby.	

Railway Name	Lobby Name/Crew's Headquarters	Location of Training/Non-running duties	Admissible Kms. (To and fro)	Remarks
	BTI	KGP	2200x2=4400	A huge variation in terms of Kms.
	FD	KGP	0	
	BTI	HWH	1450x2=2900	
	SLN	HWH	160x2=320	
	UMB	CNB	642x2=1284	
	FZR	CNB	160x2=320	
	UMB	CKP	1500x2=3000	
	SLN	CKP	160x2=320	
NFR	APDJ	MLDT	400	To and Fro
	MLDT	APDJ	320	
	APDJ	NBQ	320	
	NBQ	APDJ	46	
	APDJ	NCB	320	
	NCB	APDJ	46	
	APDJ	NJP	16	
	NJP	APDJ	320	
SECR	BJRI	BSP	160x2=320	Distance between BJRI and BSP is almost same distance between BRJN and BSP. (BJRI To BSP 197 Km. BRJN To BSP 192Km.)
	BRJN	BSP	0	
	DGG	BSP	160x2=320	Distance between DRZ and BSP is more than distance between DGG and BSP however, no admissible km is allowed to DRZ crew.
	DRZ	BSP	0	
	R	KGP	160x2=320	Distance between DURG and KGP is more than that of R and KGP however, crew having HQ at Durg gets nothing for non-running duties at KGP
	DURG	KGP	0	
	KGS	USL	160x2=320	Distance between DURG and USL is more than distance between KGS and USL however, crew having HQ at Durg gets nothing for performing non-running duty at USL.
	DURG	USL	0	

Annexure 26

[Reference Para 2.5.3]

Statement Showing Different Mileage Allowance Charged
for Loco Pilot and Guards

Crew ID: PKR1098 (Loco Pilot Goods)

Date	Duty/SER/ Loco	From	To	Train	Total Km.	Route No.	Duty hours	Total KM Earned
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
07/11/2014	WR/FGHT/GEN	PKR	PKR	PKR/PT	4	10151	06:30	160
14/11/2014	WR/FGHT/GEN	PKR	PKR	PKR/PT	4	10151	06:30	160
21/11/2014	WR/FGHT/GEN	PKR	PKR	PKR/PT	4	10151	06:30	160
24/11/2014	WR/FGHT/GEN	PKR	PKR	PKR/PT	4	10151	05:30	160
25/11/2014	WR/FGHT/GEN	PKR	PKR	PKR/PT	4	10151	06:00	160
28/11/2014	WR/FGHT/GEN	PKR	PKR	PKR/PT	4	10151	06:30	160

Crew ID: PKR7018 (Goods Guard)

Date	Duty/SER/ Loco	From	To	Train	Total Km.	Route No.	Duty hours	Total KM Earned
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
09/11/2014	WR/FGHT/GEN	PKR	PKR	PKR/PT	4	10150	06:14	210
11/11/2014	WR/FGHT/GEN	PKR	PKR	PKR/PT	4	10150	07:30	210
12/11/2014	WR/FGHT/GEN	PKR	PKR	PKR/PT	4	10150	07:09	210
13/11/2014	WR/FGHT/GEN	PKR	PKR	PKR/PT	4	10150	05:45	210
19/11/2014	WR/FGHT/GEN	PKR	PKR	PKR/PT	4	10150	07:15	210
21/11/2014	WR/FGHT/GEN	PKR	PKR	PKR/PT	4	10150	06:45	210
23/11/2014	WR/FGHT/GEN	PKR	PKR	PKR/PT	4	10150	06:14	210

Annexure 27
[Reference Para 2.5.4.1]

Statement Showing Mileage Charged for Zero Duty Hours Transaction

CREW_ID	DATE	SIGN ON		TRAIN	DUTY/ SER/ Loco FN	SIGN OFF		HRS		TOTAL KMS	Route No.	MGK
		TIME	FROM			TIME	TO	DUTY	NIGHT			
ASN2124	11-11-2014	23: 15	ASN	EC/JAJ	WR/FGHT/ GEN	23:15	ASN	00:00	00:00	120	7174	Y
ASN7005	03-11-2014	05:39	ASN	0	WR/FGHT /GEN	05:40	ASN	00:00	00:01	120	7173	Y
ASN7393	19-11-2014	16:00	ASN	EC/MTPS	WR/FGHT /GEN	16:00	ASN	00:00	00:00	120	7178	Y
HWH1111	12-11-2014	14:00	HWH	SIC 14/00	WR/FGHT /GEN	14:00	HWH	00:00	00:00	120	7170	Y
PKR1118	11-10-2014	15:30	PKR	CANCLEED	ZM/FGHT /GEN	15:30	PKR	00:00	00:00	160	10143	N
UDL2852	11-11-2014	07:30	UDL	EC/COAL/PT	WR/FGHT /GEN	07:31	UDL	00:00	00:00	120	6815	Y
UDL2852	17-11-2014	20:15	UDL	EC/AB	ZM/FGHT /GEN	20:16	UDL	00:00	00:00	120	6815	Y
DLI2117	29.10.2010	20:10	DLI	12556	ZM/CCHM/ Gen	20:10	DLI	00:00	00:00	120	11261	N
JAT1156	27.11.2014	16:00	JAT	Goods Yard	WR/FGHT/ Gen	16:00	JAT	00::00-	00:00	120	6814	N
HW1048	30.10.2014	7:50	HW	Yard Duty	WR/CCHP/ Gen	7:50	HW	0000	00:00	144	6717	N
FZR1501	01.11.2014	20:00	FZR	SP CPM LDH	WR/FGHT/ Gen	20:0	FZR	00:00	00:00	248	10112	N
FZR7020	26.11.2014	06:00	FZR	6JF	WR/CCHP/ Gen	06:00	FZR	00;00	00:00	234	6797	N
MB7282	29.11.2014	20:00	MB	54398/97	WR/CCHP/ Gen	20:00	MB	0:000	00:00	150	8442	N
SSB1889	08.09.2014	00:00	SSB	CC Duty 16/24	SP/FGHT/ Gen	00:00	SSB	00;00	00:00	39.995	10039	Y

Annexure 28

[Reference Para 2.5.4.3]

Statement Showing Handicapped Sections

Hubli Division

Table - A

(Effective from April 2004)

1	Hubli – Castlerock
2	Castlerock – Hubli
3	Castlerock – Belgaum
4	Belgaum – Castlerock
5	Hospet – Toranagallu
6	Toranagallu – Hospet

Table - B

(Effective from April 2011 upto March 2012)

1	Toranagallu – Ranjitpura – Toranagallu
2	Toranagallu – JVSL Siding – Toranagallu
3	Hospet – Vyasakeri – Hospet
4	Bellary – BIOP Siding/ Obalapuram Siding – Hospet

Annexure 29

[Reference Para 2.5.5]

Statement Showing Year-wise Programme Hours and Non-Programme Hours of Crew

Railway Name	CR			ER			ECoR			NR		
	Programme Hours	Non-Programme Hours	Percentage of Non-programme Hours to Programme Hours	Programme Hours	Non-Programme Hours	Percentage of Non-programme Hours to Programme Hours	Programme Hours	Non-Programme Hours	Percentage of Non-programme Hours to Programme Hours	Programme Hours	Non-Programme Hours	Percentage of Non-programme Hours to Programme Hours
2011-12	57388108.85	4013039.44	6.99	38552712	674040	1.75	2369664.32	558611.31	23.57	319,82,762.49	32,45,121.50	10.15
2012-13	60590174.24	4335912.44	7.16	54472293	2026672	3.72	3527793.74	851411.06	24.13	546,95,119.34	52,57,293.21	9.61
2013-14	62530765.76	4638699.19	7.42	52929017	3854794	7.28	3298489.62	646712.45	19.61	664,39,292.01	64,43,149.90	9.70
2014-15*	37472370.62	2720411.15	7.26	38127455	3321872	8.71	2130318.81	410664.95	19.28	545,71,002.54	52,10,121.45	9.55

Annexure 29

[Reference Para 2.5.5]

Statement Showing Year-wise Programme Hours and Non-Programme Hours of Crew

Railway Name	NCR			NFR			NWR		
	Programme Hours	Non-Programme Hours	Percentage of Non-programme Hours to Programme Hours	Programme Hours	Non-Programme Hours	Percentage of Non-programme Hours to Programme Hours	Programme Hours	Non-Programme Hours	Percentage of Non-programme Hours to Programme Hours
2011-12	6163064.69	452625.26	7.34	14691894.27	12,69,659.36	8.64	76,66,412.99	9,78,784.96	12.77
2012-13	30052102.83	2436564.94	8.11	20360438.93	2050373.47	10.07	103,05,316.53	14,36,879.74	13.94
2013-14	27843075.93	2322994.35	8.34	21551371.95	19,87,162.17	9.22	111,20,718.24	16,34,802.11	14.70
2014-15*	47327704.16	3985502.38	8.42	15628600.05	12,08,029.58	7.73	76,02,438.27	11,60,064.04	15.26

Annexure 29
[Reference Para 2.5.5]

Statement Showing Year-wise Programme Hours and Non-Programme Hours of Crew

Railway Name	SER			SECR			SWR		
	Programme Hours	Non-Programme Hours	Percentage of Non-programme Hours to Programme Hours	Programme Hours	Non-Programme Hours	Percentage of Non-programme Hours to Programme Hours	Programme Hours	Non-Programme Hours	Percentage of Non-programme Hours to Programme Hours
2011-12	30454720.96	2217410.64	7.28	30991649	4191197.71	13.52	5449570	559064	10.26
2012-13	45409690.99	4598847.22	10.13	42133187	7982309.01	18.95	8189344	1059952	12.94
2013-14	50654288.08	5382006.36	10.62	45739680	8015309.71	17.52	8174325	1078335	13.19
2014-15*	34581888.19	4176697.76	12.08	29399162	5032255.98	17.12	4783652	600774	12.56

Annexure 29
[Reference Para 2.5.5]

Statement Showing Year-wise Programme Hours and Non-Programme Hours of Crew

Railway Name	WCR			WR			SR		
	Programme Hours	Non-Programme Hours	Percentage of Non-programme Hours to Programme Hours	Programme Hours	Non-Programme Hours	Percentage of Non-programme Hours to Programme Hours	Programme Hours	Non-Programme Hours	Percentage of Non-programme Hours to Programme Hours
2011-12	4479367.09	392915.39	8.77	34768827	3122924	8.98	11152007.58	521797.69	4.68
2012-13	7458168.1	821628.04	11.02	52715830	6075066	11.52	14455620.42	852005.74	5.89
2013-14	7170992.42	886739.02	12.37	49824913	6009259	12.06	14692577.91	812561.35	5.53
2014-15*	6062590.48	777024.3	12.82	31877290	3288436	10.32	9066938.72	514906.78	5.68

*Pertains to period upto November 2014

Annexure 30

[Reference Para 2.5.6]

Statement Showing Results of Comparison of Crew Sign on/off Time with CMS/COA/FOIS Train Departure/Arrival Time

Particulars	Railway Name	Number of Cases	Gap
Crew Signed on after FOIS Departure time	SECR	325	1 minute to 2 hour 15 minutes
	ER	113	1 minute to 135 minutes
	CR	229	1 minute to 4 hour 29 minutes after
	NFR	138	1 minute to 1 hour 59 minutes
	SER	376	1 minute to 6 hours 45 minutes
	SR	1	7 minutes
	NCR	167	4 minutes to 93 hours 10 minutes
Total	7	1349	
Crew Signed on before FOIS Departure time	SECR)	3	15-30 hours before FOIS departure time of train
	SECR	15	2 to 3 ½ hours before FOIS departure time
	ER	1108	31 to 2635 minutes before FOIS departure time
	CR	1875	31 minutes to 36 hour before FOIS departure time
	SR	4	More than 30 minutes before FOIS departure time
	NCR	68	Two minutes to 62 hours 30 minutes
Total	5	3073	
Sign on/off before/after FOIS Arrival/Departure time	SCR	2022	Signed off before FOIS arrival time
	SCR	2020	Signed on after FOIS departure time
FOIS Train Departure time and crew Sign on time was same	ER	6	
	CR	6	
	SER	21	
Total	3	33	
Train departed after train ordering time	NR	5784	30 minute to 599 minutes
	SER	765	30 minute to 385 minutes
Total	2	6549	
Crew sign on after CMS train ordering time	NR	3083	0 minute to 552 minutes (NR)
	CR	1340	1 minute to 488 minutes (CR)
	SER	4830	1 minute to 1485 minutes (SER)
	NWR	317	1 minute to 218 minutes
Total	4	9570	
Crew signed on after CMS train departure time	NR	101	2 minutes to 104 hours(NR)
	CR	56	4 minute to 5 hours(CR)
	WR	1019	1 minutes to 665 minutes (WR)
	NFR	4	3 minute to 28 minutes (NFR)
	NWR	3	13 minutes to 32 minutes
Total	5	1183	

Annexure 31
[Reference Para 3.1]

Statement Showing Details of Multiple Traffic Advices Prepared for Crew Booking

Railway Name	Duty Type	No. of Records	Number of Times TA prepared
CR	Road Learning	182	2-6
NR	Road Learning	1384	2-52
NWR	Road Learning	21378	2-8
NFR	Road Learning	266	2-10
SR	Road Learning	3	2
SCR	Road Learning	424	2-16
SECR	Road Learning	671	2-6
SER	Road Learning	162	2-3
ER	Road Learning	1001	2-10
WR	Road Learning	993	2-96
NCR	Road Learning	798	2-25
Total		27262	Upto 96 times
CR	Working	26024	2-34
ECoR	Working	74787	2-6
NR	Working	18953	2-21
NWR	Working	23	2
NFR	Working	16859	2-24
SR	Working	30204	2-21
SCR	Working	24702	2-29
SECR	Working	69292	2-17
SER	Working	75196	2-6
ER	Working	28193	2-31
WR	Working	56063	2-52
NCR	Working	17093	2-40
Total		437389	Upto 52 times
CR	Spare	4338	2-75
ECoR	Spare	10230	2-4
NR	Spare	3561	2-10
NWR	Spare	2337	2-5
NFR	Spare	1295	2-9
SR	Spare	497	2-6
SCR	Spare	3402	2-25
SECR	Spare	9748	2-10
SER	Spare	3723	2-6
ER	Spare	2257	2-9
WR	Spare	2257	2-32
NCR	Spare	1700	2-30
Total		45345	upto 75 times

Annexure 32**[Reference Para 3.3]****Statement Showing Multiple Call Acknowledgement by Crew**

Name of the Railway Zone	Number of Calls	Number of Times acknowledged
NR	5983	2-10
SR	12890	2-7
SECR	2890	2-4
SCR	7726	Multiple times
CR	4248	2-17
ER	5159	2-4
ECoR	8151	2-38
NFR	1303	2-4
WCR	839	2-3
WR	3696	2-5
NCR	1967	2-10
Total	54852	

Annexure 33

[Reference Para 3.5]

Statement Showing Railway Zone Wise Missing Traction Details

Name of the Zones	Total Transactions	Traction (Blank)	Values like Z, ZM, Auto etc.
1	2	3	4
ER	227849	567	36
NWR	73031	1124	424
NR	391880	603	1616
CR	152774	768	0
ECR*	80641	60	0
ECoR	87610	2	0
NFR	110663	26	0
SR	35672	62	4
SECR	336125	2180	1044
SER	177385	59	2
SCR	222603	627	23
SWR	21087	1	0
WR*	36752	13878	0
NCR	137347	2574	66
Total	2091419	22531	3215

*Figures for WR and ECR in column 3 includes blank, Z, Auto etc.

Annexure 34
[Reference Para 3.9]

Statement Showing Wrong/Incomplete Details of Period of Crew Utilization

Name of the Railway	Period	Number of Hours Available with Crew	Number of Crews	Number of Crew having details of utilization of excess period	Number of Hours utilized by Crew	Number of Crew on rest for whole period	Remarks
Wrong Details of Utilization of Crew							
NR	15-10-2014 to 14-11-2014	744	3757	167	745-863	661	
	08-09-2014 to 07-10-2014	720	3731	352	723-976	639	
ER	06-10-2014 to 05-11-2014	744	811	-	-	386	
	06-11-2014 to 05-12-2014	720	820	393	725-795	381	
SR	01-10-2014 to 31-10-2014	744	1859	28	749-794	1	
	01-09-2014 to 30-09-2014	720	1852	23	725-783	Nil	
SECR	11-10-2014 to 10-11-2014	744	3921	-	-	188	
	11-09-2014 to 10-10-2014	720	3893	29	726-744	184	
NCR	05-10-2014 to 04-11-2014	744	3532	1	760	01	
	05-09-2014 to 04-10-2014	720	3609	3	742-921	01	
Incomplete Details of Crew Utilization							
NR	15-10-2014 to 14-11-2014	744	3757	41	616-736		Incomplete Details
	08-09-2014 to 07-10-2014	720	3731	16	544-719		Incomplete Details
SECR	11-10-2014 to 10-11-2014	744	3921	13	704-736		Incomplete Details
	11-09-2014 to 10-10-2014	720	3893	15	655-712		Incomplete Details

Annexure 35

[Reference Para 4.2]

Statement Showing Details of Password Used by Crew

Sr. No.	Name of the Railway	Number of records containing passwords of Crew Analysed	Number of Crew using same password	Percentage of Crew using same password
1	WR	7596	7536	99.21
2	CR	7840	7662	97.73
3	NCR	6253	6176	98.77
4	SER	7795	6959	89.28
5	SECR	6808	5430	79.76
6	SCR	9696	9491	97.89
7	NR	11437	11378	99.48
8	ER	7520	7487	99.56
9	ECR	2305	2263	98.18
10	ECoR	2017	2001	99.21
11	NER	2404	2253	93.72
12	NFR	2960	2948	99.59
13	SR	2871	2853	99.37
14	NWR	1335	1331	99.7
15	WCR	495	59	11.91
16.	SWR	1046	1046	100

Annexure 36

[Reference Para 4.2]

Statement Showing Details of Password Used by CMS Operators

Sr. No.	Name of the Railway	Number of records containing passwords of CMS Users (Operators) Analysed	Number of CMS Users (Operator) using same password	Percentage of CMS Users (Operator)
1	WR	269	212	78.81
2	CR	1399	877	62.69
3	NCR	220	120	54.55
4	SER	471	185	39.28
5	SECR	687	273	39.74
6	SCR	856	422	49.3
7	NR	1587	847	53.37
8	ER	315	192	60.95
9	ECR	368	135	36.68
10	ECoR	171	70	40.94
11	NER	518	238	45.95
12	NFR	312	249	79.81
13	SR	271	238	87.82
14	NWR	121	73	60.33
15	WCR	666	495	74.32
16.	SWR	136	69	50.74

Annexure 37

[Reference Para 4.2]

Statement Showing Details of Password Used by Chief Loco
Inspector/Senior Loco Inspector/Loco Inspector

Railway Name	Number of cases	No. of cases having same password	Percentage
CR	530	491	92.64
ECR	310	302	97.42
ECoR	154	126	81.82
ER	272	268	98.53
NCR	330	297	90.00
NER	105	98	93.33
NFR	175	165	94.29
NR	602	501	83.22
NWR	236	221	93.64
SCR	486	439	90.33
SER	209	182	87.08
SECR	227	168	74.01
SR	316	266	84.18
SWR	112	106	94.64
WCR	193	164	84.97
WR	319	282	88.40

Annexure 38

[Reference Para 4.3]

Statement Showing Railway wise CMS Users (ALP/TNC/Call Boy/Porter/Gangman/RR Bearer/Private Operator) having Supervisory Privileges.

Name of the Railway	Number of Users	Designation of Users
CR	51	TNCs/ ALPs/ Contractors
ER	51	TNC/ALP
NWR	43	TNC/ALP
SER	36	TNC/ALP
NER	105	TNC/ALP
NR	182	TNC/ALP
NCR	4	Box Porter/Cleaner
NFR	188	Call boy, Gangman, Porter, RR Bearer
SECR	117	TNC/ALP/Call Boy/ Porter/Junior Clerk/ Private Operator
WR	50	TNC/Clerk/CLI
SR	2	SLI
WCR	35	ALP/TNC
SWR	24	Non-supervisory officials
Total	888	

Annexure 39

[Reference Para 4.3]

**Statement Showing Cases Where
Booking and Supervisory Operations
Performed by Same Person**

Railway Name	Number of Cases examined	Number of cases having same user ID
ER	277849	42803
NR	391880	256525
NWR	73031	896
WR	336752	13865
NFR	110591	3516
CR	2332	817
SR	271	26
SCR	222603	116383
SER	250749	44711
SECR	336125	145384
NCR	69136	44467
Total	2071319	669393