Report of the Comptroller and Auditor General of India

Union Government (Railways)

Report No.32 of 2016

Report of the
Comptroller and Auditor General
of India

on

Integrated Coaching Management System in Indian Railways

for the year ended March 2016

Laid in Lok Sabha/Rajya Sabha on _____

Union Government (Railways)
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PREFACE

This Report has been prepared for submission to the President of India under Article 151 of the Constitution of India.

This Report of the Comptroller and Auditor General of India contains the results of the ITAudit of Integrated Coaching Management System in Indian Railways. The instances mentioned in this Report are those which came to the notice during course of test audit during the year 2015-16. Matters to the period prior to April 2015 and after March 2016 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.

Audit wishes to acknowledge the co-operation received from Ministry of Railways at each stage of the audit process.

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Abbreviations used in the Report

Abbreviation	Full form
BG	Broad Gauge
CDS	Coach Display System
CGS	Coach Guidance System
CMS	Crew Management System
COA	Control Office Application
COIS	Coaching Operation Information System
CPRC	Chief Parcel Reservation Clerk
CR	Central Railway
CRIS	Centre for Railway Information System
CTLC	Chief Train Loco Controller
CTNC	Chief Train Clerk
ECoR	East Coast Railway
ER	Eastern Railway
FOIS	Freight Operations Information System
IOH	Intermediate Over haul
MEMU	Mainline Electric Multiple Unit
MG	Metre Gauge
MIS	Management Information System
NCR	North Central Railway
NEFR	North East Frontier Railway
NER	North Eastern Railway
NG	Narrow Gauge
NR	Northern Railway
NTES	National Train Enquiry System
NWR	North Western Railway
OCV	Other Coaching Vehicle
PAM	Punctuality Analysis and Management
PCV	Passenger Coaching Vehicle
POH	Periodic Over Haul
PRS	Passenger Reservation System
PTT	Public Time Table
RBS	Rates Branch System
RDBMS	Relational Data Base Management System
SCR	South Central Railway
SECR	South East Central Railway
SER	South Eastern Railway
SR	Southern Railway
SWR	South Western Railway
TMS	Train Management System
UTS	Unreserved Ticketing System
VG	Vehicle Guidance
WCR	West Central Railway
WR	Western Railway
WTT	Working Time Table

Integrated Coaching Management System

The Integrated Coaching Management System (ICMS) application was developed by Indian Railways with the objective of monitoring punctuality of Mail Express/Passenger trains, monitoring status of coaching stock in real time and online, facilitating augmentation of train composition and planning and running of special trains on the basis of traffic demand to maximise revenue, managing asset maintenance, minimize manual intervention and to provide fool proof service to enhance the image of Railways.

ICMS was sanctionedin 2003. The project cost of ₹18.76 crore was approved in 2006. As on 31 March 2016, an amount of ₹ 16.28 crore has been incurred on project implementation and ₹ 34.6 crore on maintenance of the project. Initially ICMS was implemented at 257 locations (445 terminals) over various Zonal Railways (up to 2008). During 2015-16, due to increase in volume of passenger traffic and coaching trains, ICMS was proposed for expansion at 249 more locations (510 terminals) with a project cost of ₹ 21.34 crore.

The extent of achievement of objectives of ICMS was evaluated in Audit and the aspects related to Application controls, IT security and Business Continuity Plan were reviewed. The study was conducted over 128 locations of all Zonal Railways.

The major audit findings are as follows:

I.   Complete data of all the trains was not available in ICMS as movement of some of the trains including Exceptional trains, Extended/Special Trains, Pilot and Unscheduled Trains was not reported/available in ICMS for monitoring punctuality. There were delays in capturing train movement details which resulted in non-availability of train movement information inreal time to the users of the information.

[Paras 2.1.1, 2.1.2, 2.1.4 and 2.1.5]

II.   Data related to train/coach movement, their arrival/departure, etc. was captured in ICMS manually. Where data was captured/updated from other applications, the same was captured in other applications (like Control Office Application etc.) through manual processes/means.This data is finally reflected in National Train Enquiry System (NTES) where passengers can see arrival and departure timings of the trains in real time. Audit noticed differences between train arrival/departure data maintained in ICMS and manual records/data maintained over nine Zonal Railways. Delay in reporting and lack of accurate dataof arrival and departure timings of trains led to inconvenience to passengers. This also led to generation of wrong Management Information System (MIS) reports for Railways which affects monitoring of train punctuality.

[Paras 2.1.6 and 2.1.9]

III.   Comparison of the trains/coaches placed at platform/station lines with the actual position of trains/coaches over five Zonal Railways showed that actual placement of the trains/coaches at different lines of a station was not

reflected in ICMS.Test check showed that rake composition position available in the ICMS was not accurate and reliable as data pertaining to attached/detached coaches was not found updated in ICMS. ICMS details captured in respect of condemned coaches were neither complete nor accurate and the data did not match the manual records maintained by the Zonal Railways.

[Para 2.2.1]

IV. There was no provision to capture traffic demand in ICMS. The system is not integrated with Unreserved Ticketing System (UTS). Though ICMS has been integrated with Passenger Reservation System (PRS), it does not get details of traffic demand (in the form of wait list passengers etc.) from PRS. The integration of system with PRS/UTS could assist Railways in augmenting train composition as per the requirement of traffic demand.

[Para 2.2.4]

V. Vehicle Guidance (VG) summary is the record of composition of train and is carried by the Guard during the journey. Deficiencies in preparation of VG Summary were noticed over various Zonal Railways. In some cases the details in the VG summary reports did not match the details in the manual records. During test check it was noticed that at 13 ICMS locations, VG summary was being prepared manually mainly due to non-availability of functional printers. **[Para 2.2.5]**

VI. Test check of the loco position at various stations of five Zonal Railways showed that ICMS did not depict actual physical position of the locos. As per ICMS, there were 3165 Electric Locos and 5088 Diesel Locos in these Railways, but manual records indicated that there were 3408 Electric and 3743 Diesel Locos in these Zonal Railways during the same period.

[Para 2.2.6]

VII. Wide variations were observed between ICMS data and manual records maintained by Zonal Railways in respect of coach master and other types of coach data. These included coach master data, coaches transferred from one Zonal Railway to another, induction of new coaches, coach yard stock data and gauge wise coach position. **[Para 2.2.7]**

VIII. Audit check at selected locations showed that railways themselves did not rely on ICMS data and various Departments viz. Operating (Coaching) Department, Mechanical Control Section and Mechanical Loco Control Section at Zonal Headquarters, Train Branch/Control Offices/Yards and Statistical Department continued to use manual data for the purpose of their operations. **[Para 2.2.8]**

IX. There was no provision to capture Intermediate Overhaul (IOH) details of coaches in the system as seen in NR, SCR, SWR, ER and WR. As regards Periodic Overhaul (POH), discrepancies in ICMS data were noticed due to lack of validation controls. Data analysis over ten Zonal Railways revealed that difference between POH done and POH due dates was neither as per extant orders nor uniform in respect of same type of coaches. The data of coaches due for POH as seen during a test check at various stations of six

Zonal Railways did not match with the ICMS data. Despite having facility to identify the POH overdue coaches, it was noticed over 11Zonal Railways that 7706 coaches which were overdue for POH were part of the train composition/consists. Data on sick/fit status of coaches was not maintained in ICMS over ECR, SWR and NR.

[Paras 2.3.1 and 2.3.4]

X.   Integration between ICMS and other applications related to passengers and train services was not achieved completely, as a result of which output from the ICMS were not used in the field operations. Train consists which contain details like coach type, coach number, coach count etc., were not reported to PRS timely to help for use in train charting. Manual system of communicating Train consists to PRS was still in operation. Non-implementation of integration with Coach Guidance System (CGS) led to manual feeding of data in CGS, over NR, NER and CR.

[Paras 3.1.1 and 3.1.2]

XI.   In all Zonal Railways, 2445 coaches did not have coach built year in ICMS database. In respect of 315 coaches, coach factory turnout date was prior to coach built date. In 697 coaches, the dates of induction into service were shown 01 to 33 years before the date of built of coaches. Lack of validation checks to identify status of coaches resulted in inaccurate MIS reports. Railway Board prescribed five digit coach numbering system. However, coach number was less than five digits in 3325 cases and the coach number exceeded five digits in 13069 cases.

[Paras 3.4.1 and 3.4.2]

XII.   Discrepancies in data of Stations, Division, Yard, Base depot, Interchange Station and sick coaches indicated inadequate application controls.

[Para 3.6]

XIII.   At the ICMS locations visited by Audit, access of unauthorised persons was not found restricted in SR, SWR, NR, NCR, NER and ECoR. Passwords and user IDs of the users created by Centre for Railway Information System (CRIS) were not communicated to Chief Administrative Officer/Freight Operations Information System (CAO/FOIS) office confidentially, but by writing them on the request letter itself, thereby compromising the password security. The login page of the ICMS did not restrict the number of attempts of login by users. Password standards being followed by CRIS ICMS group at Centralized Data Centre did not conform to the laid down IT Security Policy. Records relating to authorisation for creation of user IDs and passwords were not available at Zonal Railway Headquarters in NR. Privilege assigned to users were not commensurate with job specifications.

[Paras 4.1 and 4.2]

XIV.   As per the test check of CRIS records relating to changes made in the ICMS, no system/procedure for getting appropriate approvals before releasing the changes made in the ICMS application software in the online environment was found in place.

[Para 4.3]

XV. At the CRIS Centralized Data Centre, the process for Disaster Recovery Setup was still going on. Though daily back up was being taken up by ICMS team, no off line/remote site backup of ICMS was being maintained by CRIS ICMS group. No documented Business Continuity Plan was available in SWR, NCR, SCR, ECR, ECoR, ER, WR, NER, SER, NWR and SR. Personal computers/desktops were used in ICMS locations of WR, SR, NR and NER instead of thin clients. ICMS systems were not covered under Annual Maintenance Contract over SCR, SR, NR. Smoke detectors and/or fire extinguishers were not found at ICMS locations in NCR, SR, ER, SCR, NR and NER.

[Paras 4.5.1 and 4.5.2]

Recommendations

1. *Punctuality reporting of movement of trains which are not covered under ICMS may also be brought in the scope of ICMS.*

2. *Accuracy and real time updation of arrival/departure timings of trains may be ensured to provide accurate and reliable information to the passengers.*

3. *Inconsistencies in arrival/departure timings in different modules of ICMS may be rectified to have accurate position of coaches. Accuracy, completeness and timely updation of all coach data and their movement details may be ensured and dependence on manual records may be gradually reduced.*

4. *Availability of the traffic demand (such as position of waitlisted passengers) may be facilitated in real time environment through ICMS so as to help Railways in augmentation of train composition on the basis of traffic demand, facilitate planning and running of special trains.*

5. *Provision to capture IOH details of coaches in the system may be created. Timely and accurate updation of coach POH data, sick and fit coach data and effective usage of POH/Sick/Fit operations through ICMS may be ensured.*

6. *Integration of ICMS and Crew Management System (CMS) may be ensured for generation of complete Vehicle Guidance reports so as to avoid manual intervention in the ICMS output.*

7. *Integration between ICMS and Passenger Reservation System (PRS), ICMS and Control Office Application (COA) and ICMS and Coach Display System (CDS) may be strengthened to have timely data updation and to avoid manual intervention.*

8. *Adequate validation and manual supervisory controls over data entry may be introduced in ICMS to ensure accuracy, completeness and validity of various types of data input and output.*

9. *Physical and logical access controls may be strengthened.*

10. *Change Management procedures for updation and approval of changes may be laid down and changes documented.*

11. *Business Continuity Plan/Disaster Recovery Plan may be fully implemented so as to ensure that business critical information and assets are protected from loss, damage and abuse.*

Chapter 1 Introduction

Indian Railways run more than 12000 passenger carrying trains on average (like Duronto, Rajdhani, Shatabdi, Mail Express, Passenger, Suburban etc.) and carry about 23 million[1] passengers on originating basis every day over its vast network. Integrated Coaching Management System (ICMS) is a critical IT application which computerises

- the whole coaching operations of Indian Railways and has different modules to cater to railway requirements for day to day operational activities, maintaining computerised records of various events & functionalities,

- monitoring & management of passenger carrying vehicles, other coaching vehicles and passenger locomotives; and

- generation of MIS reports for decision making and to ensure optimum utilisation of resources.

ICMS was sanctioned in 2003. The project cost of ₹ 18.76 crore was approved in 2006. As on 31 March 2016, an amount of ₹ 16.28 crore has been incurred on project implementation and ₹ 34.6 crore on maintenance of the project.

1.1 Modules of ICMS

ICMS comprises of the following modules:

a) **Punctuality Analysis and Monitoring (PAM):** This module provides various functionalities for monitoring the running and punctuality of passenger carrying trains. PAM automatically picks up the train running timings from the Control Office Application[2] (COA) & Train Management System[3] (TMS). Train timings for non-COA sections are directly fed by users into PAM through utility provided for the purpose.

b) **Coaching Operation Information System (COIS):** This module captures all operational activities of coaches, rakes and passenger locos. Data on rakes and coaches related operations is entered into the system at station level and for locos at divisional level. Zonal and divisional users of COIS can also proxy to station level, if required to do reporting for the station. COIS is integrated with PAM/COA, Freight Operations Information System (FOIS) and other applications.

c) **Data Module:** This module facilitates feeding of all master data used in ICMS pertaining to trains, coaches, infrastructure etc. including information such as train definition, train schedule, master/standard consist[4], train links,

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[1] Source: Indian Railways White Paper of February 2015 (indianrailways.gov.in)
[2] Control Office Application (COA) - Train operations on the Indian Railways are controlled and monitored by the Control Rooms in all the divisional/ area control offices. The Control office, by its very nature never shuts down and works all hours of the day and every day of the week. The Control Office Application facilitates monitoring of train movements in real time and provides movement of scheduled and unscheduled trains planned and controlled through the computer aided interface. It is this application that feeds the National Train Enquiry System (NTES) that provides passengers up to date information on train running.
[3] Train Management System (TMS) - This is an application implemented in WR and CR for integrated management and monitoring of suburban train movements and signalling, as well as planning train routes, diversions and introduction or withdrawal of rakes in service.
[4] Consist of train contains details like coach type, coach number, coach count etc. which are part of the train/rake

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station/yard lines, capacity etc.

d) **Report Module:** This module provides various reports related to all other modules including reports on master data, monitoring, user performance, historical reports, analytical reports, utility reports, etc. for different levels of ICMS users. These reports can be used as tools for monitoring, analysis and decision making.

e) **Utility Module:** This module provides facility for user management and user feedback.

1.2 Objectives of the ICMS

The Integrated Coaching Management System application was developed with the following objectives:

a) Monitor punctuality of Mail Express/Passenger trains

b) Monitor status of coaching stock in real time and online

c) Facilitate augmentation of train composition on the basis of traffic demand to maximise revenue

d) Facilitate planning and running of special trains

e) Set Bench mark for Asset Maintenance

f) Plan timely maintenance schedule including IOH/POH to minimize idling of coaches outside shop

g) Prompt planning for idle coaches and their timely booking and usage to generate more revenue to the Railways

h) To avoid manual manipulation and to provide fool proof service to enhance the image of Railways

i) To provide MIS for coaching operations

1.3 System Architecture

The design is modelled on three tier client server technology using middle ware and Relational Database Management System (RDBMS). Data from ICMS locations (stations) and Control Offices is captured through thin clients/PCs and sent to servers installed at Computer Data Centre at the Centre for Railway Information System (CRIS) through communication links for transactions processing. Application servers at the CRIS are networked and linked to a central database for transactions processing. The central database provides management reports to the users at Railway Board, Zonal, Divisional and Station level.

1.4 Organization

The organization of Chief Administrative Officer (CAO), FOIS which was created in 1994 for implementation of FOIS project over Indian Railways, functions as a coordinating office between Railway Board, Zonal Railways and CRIS for implementation of ICMS. The officials responsible for implementation of ICMS at Zonal, Divisional and Station levels of the Operating, Mechanical and

Electrical departments are as follows:

Level	Operating	Mechanical	Electrical
Zonal	• Chief Operations Manager	• Chief Mechanical Engineer	• Chief Electrical Engineer
	• Chief Passenger Transportation Manager	• Chief Rolling Stock/Workshop Engineer	• Chief Electrical Loco Engineer
	• Dy. Chief Operating Managers	• Dy. Chief Mechanical Engineer/Coaching	• Dy. Chief Electrical Engineer/Operations
	• Senior/Assistant Traffic Manager, Chief Controller and other supporting staff	• Chief Office Superintendent and other supporting staff	• Chief Traction Loco Engineer and other supporting staff
Divisional	• Sr. Divisional Operations Manager	• Sr. Divisional Mechanical Engineer	• Sr. Divisional Electrical Engineer
Station	• Chief Station Manager/Station Manager/Station Superintendent	• Chief Power Controller	• Chief Power Controller
	• Chief Yard Master/Chief Train Clerk/Head Train Clerk/Train Clerk		

At CRIS, activities relating to development, maintenance and implementation of ICMS are looked after by an ICMS group headed by a General Manager who works under the overall control of Managing Director and is supported by a technical team comprising Principal/ Senior Project Engineer, Project Engineer, Sr. Software/Network Engineer, Consultants etc.

1.5   Audit Objectives

The audit of ICMS was conducted with a view to:

I. Evaluate the extent to which the objectives of implementing ICMS were being met,

II. Review the Application Controls to assess the extent to which they ensure proper authorisation, completeness, accuracy and validity of input data and transactions, and

III. Review the IT Security to check the extent to which it is capable of reasonably protecting business critical information and assets from loss, damage or abuse.

1.6   Audit Criteria

IT Audit of ICMS was conducted keeping in view of the rules and regulations contained in Railway Codes/Manuals, instructions/guidelines/procedures issued by the Railway Administration from time to time and best practices prevalent in IT environment.

1.7   Audit Methodology and Scope

Audit methodology included scrutiny of records related to development, implementation and maintenance of ICMS project at CAO (FOIS) office, CRIS office, Zonal/Divisional Headquarters and selected ICMS locations. Online ICMS reports were reviewed, information pertaining to different aspects of ICMS was gathered from Zonal/Divisional Headquarters and from various ICMS locations using questionnaires. Discussions were held with officials at

zonal/divisional/station levels. ICMS data was analysed using computer assisted audit techniques. Entry and Exit Conferences were held at Zonal level. Exit conference was also held at Railway Board with Additional Member (Budget), Additional Member (Computerization & Information System), Director (Coaching) and other officials from CRIS.

1.8 Sample size

As of 31 March 2008, ICMS was implemented over 257 locations (445 terminals) over various Zonal Railways. This included Zonal headquarters, Divisional headquarters, stations, etc. During 2015-16, due to increase in volume of passenger traffic and coaching trains, a new work 'Expansion of ICMS System' for provision of ICMS terminals at Proxy locations (i.e. at locations where ICMS was not installed and their activities were captured through Divisional/Headquarters control offices) was sanctioned by Railway Board at a cost of ₹ 21.34 crore for 249 locations (510 terminals) over various Zonal Railways. It was observed that as on 30 April 2016, ICMS was not installed/not made operational on 11[5] locations out of 257 locations planned earlier over five Zonal Railways (ER, CR, SECR, SCR and NR).

The sample selected for the review was as follows:

a. For Audit review, Zonal headquarters offices, one divisional control office (minimum) and four locations up to ten locations with addition of one location for every five locations (beyond ten locations) or part thereof were selected over each Zonal Railway. Overall, 128 locations of all Zonal Railways were selected for review. Details of these locations are given in **Annexure 1**.

b. The transaction data of ICMS for three months' period pertaining to July to October 2015, collected from CRIS, was analysed.

c. Online ICMS reports during October 2015 to July 2016 were reviewed. Contents of ICMS data/reports were compared with manual/physical records on test check basis to verify their completeness and accuracy.

d. IT Security evaluation was primarily focussed on application level security.

e. The field audit work was conducted during October 2015 to April 2016.

1.9 Acknowledgement

The report includes the responses of Zonal Railways and Railway Board gathered during various discussions/Exit Conferences held at Zonal/Railway Board level. The Audit team wishes to acknowledge the cooperation extended during this audit by the management and staff of the Railway Administration at Zonal/Divisional Headquarters and station level as well as CAO (FOIS) office and by the CRIS ICMS team.

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[5] Chief Yard Master, Howrah, Azimganj, Katwa stations in ER; Dadar yard in CR; RRI Bilaspur in SECR,; C&W depot Secunderabad, Lallaguda workshop in SCR; New Delhi yard, Delhi yard, Sr. Station Manager, New Delhi, Amritsar station in NR

Chapter 2 Achievement of objectives of ICMS

Audit Objective I - To evaluate the extent to which the objectives of implementing ICMS were being met

ICMS Objective - Monitoring punctuality of trains, to avoid manual manipulation, to provide foolproof service to enhance the image of railways and to provide MIS for coaching operations.

2.1   Monitoring punctuality of trains through ICMS

ICMS facilitates capturing of data pertaining to various functionalities of train movement like train running timings, reasons for delayed running/detention of trains, various exceptional activities of trains. It provides various MIS Reports to enable Railway Administration at different level to monitor train movements in real time environment for ensuring their punctuality. Functionalities provided for capturing train movement related data and related reports generated by ICMS were reviewed in Audit and observations in this regard are discussed below:

2.1.1   Non-monitoring of movement of some of the trains in ICMS

A test check of trains scheduled for reporting in ICMS and trains actually reported in ICMS revealed that during February 2016 over seven[6] Zonal Railways, 27112 trains out of 154724 trains were not reported in ICMS. It was further observed that:

a. Over NR, monitoring movement of trains running in Kashmir was not done through ICMS.

b. Complete details (profile and movement) of all the Heritage (e.g. Maharaja, Buddhist, Deccan Odyssey etc.)/FTR Trains (run in collaboration with IRCTC) were not available in ICMS.

c. Movement of ten passenger trains operating between Vrindavan-Mathura Cantt. with daily/six days' frequency was not covered under ICMS.

d. Over SR arrival/departure of MEMU trains was not covered in ICMS.

e. Over ER, punctuality performance of suburban trains was not being monitored through the system in Asansol and Howrah Divisions. It was being done manually.

f. As per ICMS[7] of different dates, there were 23 trains of six Zonal Railways [8] under operations in PRS, but their details were not available in ICMS.

As such, on-line monitoring of punctuality and other operational and management activities of the above mentioned trains were not done through ICMS.

(Annexure 2 and 3)

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[6] NR, WCR, ER, SWR, CR, NER, NFR
[7] Report No. 982
[8] NR-6, WCR-1, SCR-3, NER-1, NFR-7, SWR-5

2.1.2 Inadequate provision for monitoring diverted trains

One of the options under Exception Train marking is 'Diversion'. In case, a train is diverted from its scheduled path, then the user can define its diverted path/route in ICMS and the system provides information about the scheduled path/route and diverted path/route of the diverted train. In 11[9] Zonal Railways, it was seen that ICMS did not provide movement details of train over the diverted route.

Further, analysis of ICMS database pertaining to August/September 2015 showed instances over ECoR and NR wherein, the reason for diversion of trains was captured as only 'C' in the relevant 'Remarks' column. Thus, live running position/movement of diverted trains could not be monitored through ICMS.

2.1.3 Discrepancies between COA and ICMS in respect of Exceptional Trains

Provision is available in the ICMS to mark train services as cancelled, rescheduled, short-termination, change of origination, etc. under exceptional activities. Marking of trains under exceptional activities impact other applications integrated with ICMS like COA, NTES, etc. In ten[10] Zonal Railways during October 2015 to June 2016, it was noticed that exceptional trains displayed by Punctuality Performance Report of ICMS were 305, whereas those displayed by COA Exceptional Trains Report were 288. As such, two different reports of ICMS provided inconsistent information about the same activity and impacted the quality of monitoring movement of trains.

Further review of Punctuality Performance Reports of February/March 2016 revealed that in three[11] Zonal Railways out of 1516 Mail/Express trains, 1468 trains were reported and 38 trains were marked as exceptional and details of remaining 10 trains could not be found from the report. Thus, the Punctuality Report did not reflect complete status of punctuality of the trains.

(Annexure 4a and 4b)

2.1.4 Delayed Reporting of train movement in ICMS

A Report titled 'COA to ICMS Updation Performance Report'[12] was reviewed in audit on 14 June 2016. This report gives the data regarding reporting of train movement within five minutes to 30 minutes in ICMS, in respect of all trains which have passed during the past 10 minutes to one hour. It was observed that in the five divisions of NR the reporting on time (within five minutes) was done only in respect of 42.34 *per cent* to 71.46 *per cent* of the trains. In Howrah division of ER, on time reporting was done only in respect of 73.11 *per cent* cases. Delay in capturing train movement details results in non-availability of train movement information on time to the passengers and can impact timely decision making.

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[9] NR, NCR, ER, NFR, WCR, SCR, ECoR, CR, NER, NFR, WR
[10] NR, NCR, ER, WCR, SCR, CR, NER, SER, SECR, NFR
[11] NR, ER, NFR
[12] Report No. 408D

Further, a review of the data related to movement of exceptional trains for July to October 2015 revealed that in 8032 cases over eight Zonal Railways[13], there was a delay of one day to 234 days from the train start date, in reporting movement of exceptional trains in ICMS (i.e. from COA to ICMS) by the divisions of different Zonal Railways.

(Annexure 5)

2.1.5 Non-availability of movement of various types of trains

Extended/Special Trains - A random check of new/existing trains operated/extended over Indian Railway during 2015-16 revealed that movement details of 11 trains running over four[14] Zonal Railways were not available in ICMS for the complete period for which they were extended/operated.

Pilot and Unscheduled Trains - During review of ICMS[15], movement/running position of Pilot and unscheduled trains could not be ascertained in eight[16] and nine[17] Zonal Railways respectively as train numbers of these trains were alphanumeric, which were not accepted in train number input field of ICMS.

2.1.6 Differences in arrival/departure time of trains

2.1.6.1 Differences in timings recorded in ICMS and the manual records maintained at Stations

Train arrival/departure timings details at different stations are either manually fed in Control Office Application (COA) and then updated in ICMS or the arrival/departure timings from originating/terminating stations are directly entered in ICMS manually. This data is finally reflected in National Train Enquiry System (NTES) where passengers can see arrival and departure timings of the trains in real time.

Test check for the period January-February 2015 and October-November 2015 showed that railways received numerous public complaints due to wrong reporting of train arrival/departure timings. Highlighting the inconvenience caused to the passengers, these complaints pointed out instances like the train was yet to reach a particular station, but Railway Train Enquiry System reported that the train had reached the station or while a particular train had not departed from a particular station, but it was reported that the train had already departed from a particular station.

(Annexure 6)

Train arrival/departure data pertaining different periods between July 2015 and April 2016, maintained in ICMS was compared with manual records/data maintained over selected railway stations and differences between the two sets of records were noticed over nine[18] Zonal Railways. Over SER, a review of COA-ICMS Schedule Mismatch Report revealed a 63 minutes time gap between ICMS

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[13] NR, WCR, SCR, SWR, ER, NER, CR & SECR
[14] SR - 6, NCR - 2, WCR - 2, SECR - 1
[15] ICMS Report No.508D for period April 2013 to March 2016
[16] NR, SR, WCR, ER, SCR, CR, NER, NFR
[17] NR, SER, ER, WCR, NCR, SECR, SWR, SCR, NER
[18] NR, ER, NFR, SER, SR, NWR CR, WCR, SWR

and COA in respect of time of arrival of train number 38319 (local train between Howrah and Mecheda having a total running time of 1 hr and 12 minutes) having start date 1 October 2015, raising a doubt on the correctness of the data being captured in ICMS.

Lack of accurate data of train movement leads to inconvenience to public, projects a bad public image of Indian Railways, generates wrong MIS reports for Railway Administration and affects monitoring of train punctuality by the Railway Administration.

Railway Board during Exit Conference (October 2016) stated that the matter is given utmost importance and is regularly monitored at Railway Board level. They further stated that action is also taken against officials who are responsible for wrong reporting and entering incorrect data in the system.

2.1.6.2   Abnormalities/differences in arrival/departure time in ICMS

Analysis of trains arrival and departure timings data recorded in ICMS was done in ten Zonal Railways[19] for the period July to October 2015. In eight Zonal Railways[20], the recorded actual departure time of trains, in respect of 322819 stoppages (transactions), was prior to trains' scheduled departure time and the difference in respect of 266 stoppages (transactions) pertaining to six Zonal Railways was in the range of one hour to one day. In eight Zonal Railways[21], the recorded actual train arrival time of trains, in respect of 284009 stoppages (transactions), was prior to trains' scheduled arrival time and the difference in respect of 9666 stoppages (transactions) was in the range of 30 minutes to 96 hours.

The abnormal/inordinate differences indicated that correct data was not captured in ICMS and the system lacked adequate controls to validate arrival/departure time of trains. Incorrect information affects monitoring of punctuality of train movement by the Railway Administration.

2.1.6.3 Discrepancies in Working Time Table and Public Time Table/Train Arrival-Departure Time

Review of working time table (WTT) and public time table (PTT) data for October 2015 over eight Zonal Railways revealed inconsistent arrival/departure timings. It was noticed that

- In respect of 29481 stoppages of eight[22] Zonal Railways, the arrival time as per Public Time Table was earlier than Working Time Table and difference was in the range of 1 minute to 1440 minutes.

- In respect of 12885 stoppages of five[23] Zonal Railways, the arrival time as per Public Time Table was later than that of Working Time Table and difference was in the range of 1 minute to 675 minutes.

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[19] NR, NCR, NWR, WCR, SCR, SWR, CR, ER, SECR, NER
[20] NR, NCR,SCR, SWR, CR, ER, SECR, NER
[21] NR, NCR, NWR, WCR, SCR, SWR, CR, NER
[22] NR, WCR, SWR, SECR, CR, SCR, NER, NFR
[23] NR, SWR, SECR, SCR, NFR

- In respect of 11775 stoppages of seven[24] Zonal Railways, the Working Time Table departure time was prior to Public Time Table departure time and difference was of 1 minute to 501 minutes.

- In respect of 28893 stoppages of six[25] Zonal Railways, the Working Time Table departure time was after the Public Time Table departure time and the difference was in the range of 1 minute to 1440 minutes. All these were intermediate stations.

The large differences in WTT and PTT timings did not appear to be plausible and were practically not possible.

2.1.7   Incomplete data on train stoppages, train name in comparison to PRS

2.1.7.1   Train stoppages

As per ICMS Report No. 983 of different dates and ICMS database, there were 187 stations/stoppages pertaining to 12[26] Zonal Railways which were available in various train schedules of Passenger Reservation System (PRS), but were not available in ICMS trains schedules.

These discrepancies in the stations/stoppages are required to be addressed by the Zonal Railways for facilitating effective monitoring of train movement and to provide complete information to users about movement of trains.

(Annexure 7)

2.1.7.2   Train name mismatch

Review of ICMS[27] revealed that there was mismatch in respect of train names[28] between ICMS and PRS and the mismatch was due to a number of reasons including use of station code instead of station name, non-usage of station code of originating and/or terminating station, incomplete name of the train etc. Mismatch in train name creates confusion among passengers.

2.1.8   Non-usage of ICMS Reports related to Punctuality/Monitoring of Trains

While reviewing the working of Punctuality Section it was noticed that in four[29] Zonal Headquarters offices ICMS reports were not directly used for monitoring, but the data from ICMS was used for manually preparing reports and these reports were used by the Railway Administrations during discussions/meetings. This was due to the fact that data/information available through ICMS reports was not as per the user requirements.   **(Annexure 8)**

Further, it was observed that data relating to punctuality performance of trains was available in ICMS for one-month period only. In the manual environment data was available for previous three to five years, which facilitated Divisions to compare performance over the years.

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[24] NR, WCR, SWR, SECR, CR, SCR, NFR
[25] NR, SWR, SECR, SCR, NER, NFR
[26] NR, NCR, SR, NWR, CR, WCR, SCR, ECR, NER, SECR, SWR, NFR
[27] Report No. 986
[28] NR - 254 trains, ER - 143 trains
[29] NR, SR, WCR, ER

2.1.9   Option for Generation of Consolidated Reports not functional

In the following two reports, the option to generate collective report for all types of trains was not functional (NR and ER):

(a) Month-wise Trains Performance Report-Not Losing Time (NLT) basis and Month wise Trains Performance Report-RT terminating basis[30].

(b) Punctuality Performance Report (Report No. 29 – Good/Bad Runner)

2.1.10 Wrong/Inconsistent Output - Train Movement and Loco Position

During the review of ICMS[31], it was noticed over NR, ER, SECR and SCR that these reports provided inconsistent details about train movement, when Report No. 1002 was viewed under Full Running type option and under Textual Running type option.

(Annexure 9)

The above findings indicates that complete data of all the trains was not available in ICMS and movement of some of trains including exceptional train was not reported/available in ICMS for monitoring and ensuring punctuality. Delay in reporting of arrival/ departure timings of trains and lack of accurate data of train movement led to inconvenience to passengers and generation of wrong MIS reports for Railway Administration which affected monitoring of train punctuality by the Railway Administration. The punctuality percentage during 2015-16 (up to February) reviewed in seven Zonal Railways[32] was between 70.33 per cent and 94.72 per cent against the target of 90 per cent to 96.42 per cent[33]. As such, the objective of monitoring running of the trains and ensuring punctuality of trains was not fully achieved.

Railway Board during the discussion in the Exit Conference (October 2016) agreed with the audit observations. As regard coverage all types of trains in ICMS, it was stated that some routes which have been added to the network recently or route with insignificant traffic may not be part of the ICMS and would be added now. They further stated that post audit a lot of changes/rectification have been incorporated in the ICMS. They were requested to furnish a list of such changes made. As regard manual intervention, it was stated that though these cannot be done away completely, these are being reduced gradually.

ICMS Objective - Monitoring status of coaching stock in real time and online, facilitate augmentation of train composition on the basis of traffic demand to maximize revenue, facilitate planning and running of special trains.

2.2   Monitoring status of coaching stock through ICMS

ICMS enables Railway Administration to capture details like coach holding (including transferred/new coaches), train/rake consists and links, attachment/detachment of coaches, coach/rake movement/utilization in different services, loco holding, loco status, loco movement, station details, distances etc.

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[30] Report No.201 and 202
[31] Report No. 504 and 1002
[32] NR,WCR, ER, SWR, CR, NER, NFR
[33] Target For NR - 90, SWR - 96.42, CR - 96, NER - 90 (Annexure 1)

The system is intended to provide the data of each coach on Indian Railways readily available through various online MIS reports so that the Railway Administration can ensure better coach management, their optimum usage and traffic management at all levels.

The review of the ICMS coach data and information provided by ICMS through various MIS reports was conducted in the light of the ICMS objectives. The audit findings in this regard are discussed below:

2.2.1   Incomplete information of coaches in ICMS

2.2.1.1 Non-updation of attached/detached Coaches - Non-depiction of actual coach position

In nine[34] Zonal Railways, scrutiny of records for the period March 2015 to June 2016 revealed that rake composition position available in the ICMS was not accurate and reliable as data pertaining to attached/detached coaches was not found updated. Instances were also noticed where actual physical position of coaches was not depicted correctly in ICMS. As such, the data was not reliable for monitoring status of coach real time and online.

(Annexure 10)

2.2.1.2 Incomplete Depiction of Current Status of Coaches

One of the main objectives of ICMS was to monitor status of coaching stock in real time and online. A review of the ICMS data pertaining to current details of coaches over 12[35] Zonal Railways for October 2015 revealed that the database was providing incomplete/ inconsistent/incorrect current status of coaches. Out of 40094 coaches, current details of 30044 coaches were available in ICMS. Current status of 1570 coaches was disputed[36]. In respect of 472 coaches the disputed status was more than 8 to 80 months old which indicated that these coaches were not in use for such a long time. As per database, current location of 3325 coaches was on platform, but database did not indicate their line number. Line number of 174 coaches was zero and position of 742 coaches was also not available. Thus, incomplete information was not helpful for effective management of coaches. Further, disputed status of so many coaches for such a long period of time vis-à-vis manual records indicate that either the ICMS data was not in use or Railway Administration was not relying on ICMS data due to its factual inaccuracy. **(Annexure 11)**

2.2.1.3 Non-capturing of loading/unloading details Parcel Coaches/Vans

ICMS has provision to capture loading/unloading details of VPH/VPU[37] coaches. A test check of the coach loading/unloading data revealed that loading details of VPH coaches over five[38] Zonal Railways were not captured in ICMS. Only 182[39] records of loading of VPH/VPU coaches were available during 2006 to 2015

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[34] NR, SER, NFR, SR, NWR, CR, WCR, ECoR, SWR
[35] NR, NCR, ER, NFR, NWR, WCR, SCR, SWR, SECR, ECR, NER, CR
[36] A coach is called disputed when a user marks the coach as 'Physically not arrived' while recording the arrival of a train.
[37] High Capacity Parcel Vans and Parcel Vans
[38] NR, ER, SWR, WCR, CR
[39] NR-98, CR-84

(October) in ICMS whereas as per manual records, 339 VP coaches were loaded at old Delhi station (NR) and Wadi Bunder (CR) during July 2015 to September 2015. Thus, loading/unloading details of VPH coaches available in ICMS were incomplete.

(Annexure 12)

2.2.1.4 Incorrect population of train placement data

A comparison of the trains/coaches placed at platform/station lines was performed with the actual position of trains/coaches at a platform/station over five Zonal Railways[40] and it was found that actual placement of the trains/coaches at different lines of a station was not reflected in ICMS. Thus, information about coach/train position provided by ICMS was not reliable.

(Annexure 13)

2.2.1.5 Train profile without having Train Consist details

Analysis of ICMS data revealed that 2063 trains of NR, ER, SWR and CR (most of them special trains) did not have their train consist in the database. Further, six trains of NR had validity from 22 September 2015 to 31 December 2099 and six trains of SWR had validity from 2 February 2012 to 31 December 2099.

It was further observed that in NR, NCR, SECR and WR, ICMS allowed movement of narrow gauge trains without having train consist and the information provided by ICMS about train movement, train consist and coach utilization of NG trains was not correct. As such, complete coach details were not captured in ICMS leading to generation of incomplete information.

2.2.1.6 Data on condemned coaches

Analysis of ICMS data regarding condemned coaches for October 2015 over eight Zonal Railways[41] showed that the details captured were neither complete nor accurate and the data did not match the manual records maintained by the Zonal Railways.

(Annexure 14)

Scrutiny of the ICMS database/Reports over ten Zonal Railways[42] revealed that majority of the coaches having null/online status were in operations/use even after the expiry of their condemnation date. Further, POH of coaches, having expired condemnation dates and majority of them recommended for condemnation, was performed after the expiry of their condemnation date which indicated that ICMS did not have adequate controls to validate data input pertaining to POH and the information available in the ICMS was not correct and reliable.

(Annexure 15)

2.2.2 Verification of Rake Consist without actual arrival of train

As per the provision available in ICMS, when a train arrives at a station, the ICMS operator enters arrival time (in case auto arrival has not been done) and

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[40] NR, NWR, CR, SWR, SR
[41] NR, ER, NFR, WCR, SCR, SWR, SECR, NER
[42] NR, SR, NFR, SWR, SECR, ECR, ER, NER, CR, WR

verify train/rake consist for its linked trains. During the scrutiny of ICMS operations, it was noted in NR that dummy train arrival time was captured in ICMS (COIS) and train consist was confirmed without actual arrival of the train. In SER, the reporting window of COIS was available for one hour from the schedule arrival of train and users were compelled to make entry within one hour even if the train had not actually arrived. As such, verification of rake consist after actual arrival of train was not being performed through ICMS.

2.2.3 COIS and PAM - Differences in Train Arrival/Departure Timings

A comparison of train arrival/departure time recorded in COIS module and PAM module revealed differences/inconsistencies in arrival and departure timings of trains over NR, SECR, ER and CR. As such, the actual data of train movement was not captured and the position of coaches/rakes was not depicted correctly in ICMS.

(Annexure 16)

2.2.4 Integration between PRS/UTS and ICMS – Non-capturing of Traffic Demand

It was observed that there was no provision to capture traffic demand in ICMS. The system is not integrated with Unreserved Ticketing System. Traffic demand for coaches can be ascertained after assessing the position of passenger traffic and number of reserved/unreserved tickets sold through PRS/UTS. Though ICMS has been integrated with Passenger Reservation System (PRS) of Indian Railways, it does not get details of traffic demand (such as position of waitlist passengers etc.) from PRS which could assist the Railway Administration in augmenting train composition as per the requirement of traffic demand. (NR, ER, SCR, WR).

2.2.5 Deficiencies in preparation of Vehicle Guidance Summary

Vehicle Guidance (VG) summary is the record of composition of train and is carried by the Guard during the journey.

2.2.5.1 Discrepancies in generation of Vehicle Guidance Summary

Review of ICMS data pertaining to VG revealed the following discrepancies across different Zonal Railways:

a. In respect of 730 cases, multiple VGs (ranging from 2 to 6) were generated by the ICMS at the same generation time in respect of same train having same train start date and instances were noticed where status of the rake was recorded as XXXXXX, but description of this code was not available in table containing rake status codes.

b. Data analysis also revealed that in respect of 11196 coaches, 23745 VGs were generated in which generation of more than one VG was involved and generation/updation time was same (SER).

c. VG generated after change in the composition of train did not reflect the changes made.

d. Coaches physically attached with the rakes could not be included in the composition of the trains in the ICMS as either the coaches were already attached in ICMS with other train which necessitated entering coach details in

the 'Remarks' column or coach were not available in ICMS database, and their details had to be entered in the VG manually.

e. Instances were noticed where details of coaches and loco available in system generated VGs were not matching with physical records.

f. Manual VGs were being prepared due to different reasons. Operations pertaining to attachment/detachment of slip coaches were not performed, as VGs generated through the system were not reliable to that extent.

(Annexure 17)

2.2.5.2   Incomplete VG Report - Lack of Integration between ICMS and CMS

Review of Vehicle Guidance Summary (VGs) generated through ICMS over 12 Zonal Railways[43] for the period 1 July 2015 to 15 October 2015 showed that

a. 41176 VGs of 11 Zonal Railways did not have loco details.

b. 197573 VGs of 12 Zonal Railways did not have Guard details and

c. 204509 VGS of 12 Zonal Railways did not have Driver details.

d. During test check of field visits over SER, NER, SR and NR, VGs were found without Driver and Guard details.

This shows that ICMS did not have interface with Crew Management System (CMS) which captures data of Loco Driver/Guard. It is pertinent to state that though a decision was taken in Chief Freight Transport Managers' Conference at Goa during 16/17 July 2015 to integrate ICMS and CMS, it was yet to be done.

(Annexure 18)

2.2.5.3   Manual Preparation of VG Summary

During the review of ICMS over nine[44] Zonal Railways, it was noticed that at 13[45] ICMS locations VG summary was being prepared manually mainly due to non-availability of functional printers. Thus, inadequate infrastructure compelled users to prepare VGs manually.

(Annexure 19)

2.2.6   Incorrect data on passenger locos

2.2.6.1   Incorrect Loco Master Data

Comparison   of the Loco Master details available in ICMS over 12 Zonal Railways[46] with manual records/loco availability targets fixed by Railway Board showed differences between the two sets of records over all the Zonal Railways. As per ICMS, there were 3165 Electric Locos and 5088 Diesel Locos in these Railways, but manual records indicated that there were 3408 Electric and 3743 Diesel Locos in these Zonal Railways during the same period. Differences were

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[43]NR, NCR, ER, ECoR, NWR, WCR, SCR, SWR, SECR, ECR, CR, NFR
[44] NR, ECR, NER, SCR, CR, SWR, SR, NFR, WR
[45] NR – Amtritsar, Jammu, ECR- Rajendra Nagar Patna terminal, Darbhanga, NER- Gorakhpur, SCR- Nanded, CR- Mumbai CST, Dadar, and LokmanyaTilak Terminus, NFR – Katihar, New Jalpaiguri, WR – New Bhuj and Bharuch
[46] NR, NCR, WR, ER, NFR, WCR, SCR, SWR, SECR, ECR, NER, CR

also noticed in respect of type of locos which indicated wrong data entry and raises doubt about the reliability of the data. **(Annexure 20)**

2.2.6.2 Incomplete/wrong details of movement/position of locos

a) Wrong loco position - During test check of the loco position at various stations of five Zonal Railways[47], it was observed that ICMS did not depict actual physical position of the locos and even dummy loco numbers were in use to operate trains. Thus, actual loco attached to the rakes were not reflected in the system and loco position reflected by ICMS was not reliable.

b) Incomplete capturing of loco movement - In order to facilitate reporting of actual light engine movement, a new light engine movement facility was provided in ICMS and it was expected that all necessary coaching loco events would be covered from movement perspective and Railways would be able to run the trains with correct loco number. A review of the light engine movement over 11[48] Zonal Railways showed 1614 instances of loco cut-in[49] in these railways over different dates which indicated that despite having loco engine movement facility, loco cut-in facility was still in use which leads to wrong generation of MIS reports pertaining to loco movements.

As per ICMS Passenger Loco Running Info Report, during 1 March 2016 to 23 March 2016, no Narrow Gauge (NG) loco was running over NR, though NG trains were running over NR during the above period. Similarly, in SECR, the report depicted information of NG trains but composition of train report depicted Nil record. Thus, the information about loco operations depicted by ICMS was incomplete.

c) Electric Loco Running over Diesel Traction- Review of ICMS Report number 1509 over nine Zonal Railways[50] revealed that electric locos were running over diesel track which is practically not possible. The report was reviewed over a different period of time in four Zonal Railways[51] and it was noticed that despite having information about operations of locos over wrong track, no remedial action was taken to rectify the data.

(Annexure 21, 22 and 23)

2.2.7 Mismatch between ICMS and manual data

Wide variations were observed between ICMS data and manual records maintained by Zonal Railways in respect of coach master and other types of coach data as given below:

- A comparison of the coach master data and manual records maintained over 15 Zonal Railways[52] revealed wide variations[53] in the number of coaches being held by these Zonal Railways.
- A comparison of data regarding coaches transferred from one Zonal Railway

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[47] NR, NFR, SER, CR, WCR
[48] NR, NCR, WCR, SCR, ER, SECR, SWR, CR, NER, NFR, ER
[49] A facility available in ICMS to make a loco available at a particular location from other location without reporting/capturing actual movement details of a loco in ICMS
[50] NR, NCR, SCR, ECR, WCR, SWR, CR,NER, ER
[51] NR, SCR, ECR, WCR
[52] NR, NCR,WR, SR, ER, NFR, CR, SCR, SWR, ECoR, WCR, SECR, ECR, NER, NWR
[53] Manual data showed 2474 coaches less than ICMS (ER) and manual data showed 159 coaches more than ICMS (NWR)

to another with manual records/information made available by 11[54] Zonal Railways revealed discrepancies[55] between the two sets of records.

- ICMS data regarding induction of new coaches did not match with the manual records in seven[56] Zonal Railways. While the ICMS depicted 3790 coaches added to the Zonal Railways during 2013-16, the manual records of Operating/Mechanical department of the same railways, indicated only 2637 coaches.

- Coach yard stock data in ICMS was found in variation to the manual records over six[57] Zonal Railways. The main cause of variation was non updation of data related to coach position/movement in ICMS. There were also differences in the number of passenger coaches and other coaches ranging between -1(SECR) and 35 (NR) in nine[58] Zonal Railways.

- As per ICMS, gauge wise coach position showed 41013 BG (Broad gauge), 973 MG (Metre gauge) and 350 NG (Narrow gauge) coaches on 11[59] Zonal Railways, however, as per manual records of Operating Department of these Zonal Railways, they had 33289 BG, 445 MG and 611 NG coaches respectively.

The difference between two records raised doubts about the accuracy and completeness of ICMS data. Inaccurate coach data affected monitoring of coaching stock on real time basis through ICMS.

(Annexure 24a, 24b, 24c, 24d, 24e, 24f)

2.2.8   Use of manual records/processes instead of ICMS data

Audit check at selected locations showed that railways themselves did not rely on ICMS data and various Departments continued to use manual data for use in their operations as discussed below:

2.2.8.1 Operating (Coaching) Department

Coaching section of Operating Department at Zonal Headquarters maintains records of all the coaches pertaining to the respective zone and manages assignment of coaches for various trains on a daily basis. It was observed that

- In NR, in order to manage coaching stock and their assignment for various trains, Coaching Section in Headquarters was using an in-house application software COSMOS[60], in which coach data and their position was being collected over phone from units for manually preparing reports instead of generating through ICMS. Delhi and Ambala divisions were also maintaining and relying on manual records of coaches.

- Similarly, over SWR and WCR, Coaching sections were relying on manual records/register for management of coaches. In CR & WR (Dadar, Lok Manya Tilak Terminus and Mazgaon yard), the information was being collected telephonically.

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[54] NR, NCR, WCR, SCR, SWR, SECR, ECR, CR,NER,ER, NFR
[55] -21 coaches in CR to 39 coaches in NFR in 2013-14
[56] NR, NCR, WCR, SWR, SECR, NER, NFR
[57] NR, WCR, SWR, NWR,NFR,WR
[58] CR, ER, NCR, NER, NR, SCR, SECR, SWR, WCR.
[59] CR, NR, NCR, NEFR, WCR, SECR, ER, NWR, SCR, ECR and WR
[60] developed through in-house efforts in MS Access and Visual Basic

2.2.8.2 Mechanical Control Section at Zonal Headquarters offices

Mechanical Control Section keeps control over running/ maintenance/repair of coaches over respective Zonal Railways. Review revealed that at seven[61] Zonal Railway Headquarters the section manually prepared various reports[62], after getting feedback about coaches from various divisions/units over phone, for submission of the same to higher officials. ICMS terminals provided in Mechanical Control section were primarily used only for monitoring movement of trains.

2.2.8.3 Mechanical Loco Control Section at Zonal Headquarters offices

Mechanical (Diesel) Loco Control section controls/monitors the movement and status of all Diesel locos (goods/passengers) and their crews, on round the clock basis. Review over six[63] Zonal Railways, showed that this section was not relying upon the information related to diesel loco provided by the ICMS and instead collected the information manually on a daily basis to update the same in ICMS. The section was also maintaining loco related all their records manually[64].

2.2.8.4 Train Branch/Control Offices/Yards

During the scrutiny of records at various locations of ICMS including Train Branch, Yard, Station Manager/Station Superintendent office, Control office of eight[65] Zonal Railways, it was noticed that all the locations were maintaining almost all the records/registers[66] manually which were being maintained before introduction of ICMS.

2.2.8.5 Statistical Department

During the examination of records of Statistical Branch of ten[67] Zonal Railways, it was observed that various reports such as Punctuality Performance, Passenger train performance, Mail Link outage statement, Traffic density statement, Rolling Stock (carriage and wagon) performance etc. were being prepared manually for submission to Railway Board. To prepare the reports, the data was compiled/ collected telephonically or through input received from other subordinate offices.

Maintenance of digital as well as manual records not only involve avoidable deployment of manpower in maintaining two sets of records, it also defeats the very purpose of computerisation of the activity.

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[61] NR, WCR, SCR, SECR, ECoR, SWR, WR
[62] Coaches Ineffective (AC & Non AC) Position, Railway Board Position, Damaged vehicle stock (Mechanical) & (Electrical), Coaching Performance, AC Coach Division Ineffective, NAC Coach Division Ineffective, Overdue Coaches and Balance Due POH Coaches, Over Due and Balance Due IOH Coaches of Mail Exp
[63] NR, ECoR, WCR, SWR, SECR, WR
[64] Engine Failure Record Register, Accident Report Register, Loco Schedule: Outage, Incoming Message Register, Outgoing Message Register, Division wise Loco Schedule Register (showing deviation in loco schedule), Different Loco position
[65] NR, ER, ECoR, SCR, WCR, SWR, NER (Gorakhpur), WR
[66] Coaching Position Register, IOH and Trolley Register, Booking Register, Detention Register, Inward Control Book, Station Master Diary, Coach Register (POH), Outward and Inward Train Register, Coaching Stock Report Register, Attaching Register, Detaching Register, Shortage Register, Composition Charting, Coaching Cabinet Register, Sick and Fit Coach Register, Rake Link Register, etc.
[67] NR, SR, ER, ECoR, WCR, SCR, SECR, CR, SWR, NER

2.2.9   Wrong Generation of Loco Change Summary/Loco Position Report

During the review of Loco Change Summary Report[68], it was noted that the report depicted same information irrespective of the option about BG, MG or NG type of locos selected by the user (NR, NCR, WCR, SCR, SECR, SWR). Over NER, Report No. 1511 did not depict any details about MG loco. Thus, date provided by ICMS was incorrect and not fit for decision making. Review of ICMS operations at Ambala station (NR) revealed that ICMS depicted one loco attached with two different trains which was not possible and information provided by ICMS was not reliable. Review of loco movement/position on SER revealed that ICMS depicted inconsistent and inaccurate position of locos.

(Annexure 9)

2.2.10   Lack of facility to view ICMS reports in different Internet Browser

During examination of Report Module of ICMS, it was noticed that the facility provided in ICMS to copy contents of the reports as well as to export the contents of the reports in Excel format was operational only when the reports were viewed in Internet Explorer browser and not in other browser like Google Chrome etc. The restriction to copy/export ICMS contents to a single browser is not conducive to the usage of ICMS, particularly when a number of browsers are being used now-a-days.

Above findings indicated that due to lack of availability of complete, accurate and real time details of coaches/loco and non-capture of traffic demand details, despite having integration with PRS, ICMS has not been able to effectively assist Railway Administration in monitoring coaches and locos in real time and in online environment. Railway Administration was not effectively using ICMS for managing coach/loco operations and continued to rely on manual procedures and records.

ICMS Objective - Set benchmark for assets maintenance, plan timely maintenance schedule including IOH/POH to minimize idling of coaches outside shop, prompt planning for idle coaches and their timely bookings and usage to generate more revenue to the Railways.

2.3   Managing coach maintenance through ICMS

ICMS has a provision to capture maintenance and other related details of coaches like their maintenance periodicity, their sick/fit status etc. which can assist railway administration for undertaking timely remedial action for better management/ utilization of coaches. Audit findings from the review of the coach maintenance and status related data/ records are discussed below:

2.3.1   Lack of provision to capture IOH schedule of coaches

One of the objectives of ICMS was to plan maintenance schedule including Intermediate Overhauling (IOH) of coaches. However, it was observed that there was no provision to capture IOH details of coaches in the system as seen in NR, SCR, SWR, ER and WR.

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[68] Report No. 1511

2.3.2 Lack of adequate details of primary maintenance

As per ICMS Report[69] on 'Rake Link with no PM (Primary Maintenance)' of different dates in six Zonal Railways, 36[70] rake links did not have Primary Maintenance details. There were 63048 records[71] where the movement details in terms of coach kms. after the Primary Maintenance had been captured as null. Incomplete information about primary maintenance of coaches affect timely maintenance of coaches.

2.3.3 Missing/Invalid Train Link - Lack of Action

Rake linking[72] is the term used for the decision of assigning physical rakes to train services on a regular basis. As per ICMS[73] pertaining to March to June 2016 of nine[74] Zonal Railways, 85 trains had broken rake links, 44 trains had invalid rake links, 34 trains did not have any rake links and 36 trains had multiple rake links. Lack of proper train links results in disruption in smooth capturing of data pertaining to trains operations/movement in ICMS. It was noted from the ICMS reports that despite having information about defective links, Railway Administration did not take remedial action to correct the data. If proper and valid rake links are not available, the incomplete information cannot be used for effective rake utilization. **(Annexure 25)**

2.3.4 Discrepancies/Inconsistencies in ICMS data due to lack of validation controls

2.3.4.1 Inconsistencies in Coach POH Data

As per extant orders, Periodical Overhaul (POH) of AC/Rajdhani/Shatabdi/Mail Exp/Jan Shatabdi coaches becomes due after a period of 18/24 months. Data analysis over ten[75] Zonal Railways revealed that difference between POH done and POH due dates was neither as per extant orders nor uniform in respect of same type of coaches. It contained cases where POH due dates, which were either before POH done dates or after POH done dates. This indicated that ICMS did not have adequate controls to validate POH data when the same is entered, which rendered the data unreliable and unusable for any decision making process.

(Annexure 26)

2.3.4.2 Large Number of Coaches due for POH- Mismatch in Manual and ICMS Records of POH

As per ICMS Report No. 651 as well as ICMS data, 15782 coaches were due for POH over ten[76] Zonal Railways as checked on different days between January 2016 and July 2016. The data of coaches due for POH as seen during a test check

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[69] Report No. 962
[70] NR-5, CR-2, SCR-7,ER-4, SWR-15, NER-03
[71] Out of total 63074 records in Coach Current Table
[72] The rake links are a means to provide effective rake utilization by maximising reliability of services, increasing operational flexibility keeping in view availability of maintenance facilities, safety considerations and norms of operation.
[73] Report No. 962
[74] NR, NCR, CR, WCR, SCR, NER, SWR, ER, NFR
[75] NR, NCR, SER, ER, SCR, SECR, NFR,CR, NER, WR
[76] NR, SCR, ECoR, CR, ER, WCR, SECR, NER, SWR, NFR

at various stations of six[77] Zonal Railways however, did not match with the ICMS data. This indicated incorrect data entry of information regarding coach maintenance. **(Annexure 27 a and 27 b)**

During the examination of train consist data, it was noticed that train consist also included coaches which as per ICMS database were due for POH. Though ICMS allowed attachment of POH due coaches in the train consist but indicated them in red while displaying train consist, to enable a user to identify POH overdue coaches in the composition/consist of a train for remedial action. Despite having facility to identify the POH overdue caches, it was noticed over eleven[78] Zonal Railways that 7706 coaches which were overdue for POH were part of the train composition/consists. As the POH details captured in ICMS were not accurate, the information in ICMS was not fit for decision making.

(Annexure 28)

2.3.4.4 Sick and Fit Coach data

It was observed that data on sick/fit status of coaches was not maintained in ICMS over ECR, SWR and NR[79]. Further,

- A total of 2888 coaches were declared sick long back (between 2008 and 2014), but not declared fit as yet over all Zonal Railways[80], which meant that these coaches were not put to normal use since their sick marking dates. In nine[81] Zonal Railways, fit marking dates of 12157 coaches were not recorded in the database though their fit reporting dates were recorded in ICMS. Thus, it could not be ascertained from the data as to when these coaches were declared fit. The data was thus not correct and reliable.

- Over 12[82] Zonal Railways, 44762 coaches were reported sick in ICMS after a gap of 30 minutes to 53437 minutes during 1 October 2013 to 7 October 2015, which indicated that data was not reported on a real time basis.

- Analysis of 79641 coaches reported fit over seven Zonal Railways[83] during 1 October 2013 till October 2015 revealed that out of these, 55187 coaches were reported as fit after a period of 30 minutes to 719 minutes except one coach which was reported fit after a delay of 525610 minutes. Analysis of ICMS data revealed that placement time and placement reporting time of sick coaches reported fit was generally not captured in ICMS.

- A comparison between manual and ICMS records on test check basis also showed differences in the timings of declaration of a coach sick or fit in Ambala and Jabalpur locations. **(Annexure 29a, 29b, 29c, 29d)**

Thus, incomplete data of sick and fit coaches was not helpful in taking decisions

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[77] NR, NWR, NFR, CR, SWR, NER
[78] NR, NCR, ER, NFR, NWR, WCR, SCR, SWR, SECR, ECR, WR
[79] Amritsar, New Delhi, Anand Vihar, Sarai Rohilla in NR and Jabalpur in WCR
[80] Till 7 October 2015
[81] NR, ER, WCR, SCR, SWR, SECR, ECR, CR, NFR
[82] NR, NCR, ER, NWR, WCR, SCR, SWR, ECR, SECR, CR, NER, WR
[83] NR, ER, SWR, NER, SECR, WR, NFR

for effective coach utilization and forced the Railways to rely on manual procedures and records.

Above findings indicated that valid rake links were not maintained for all the trains, thereby making the data unusable for effective utilization of coaches/rakes. ICMS data on coach status and maintenance was not accurate, reliable and complete and, thus, not usable for monitoring timely maintenance of coaches and for prompt planning of idle coaches.

During Exit Conference (October 2016), Railway Board agreed that the facility to monitor coach utilization and maintenance were not being used by the Railways. It was further stated a facility has been provided to capture coach inventory data from the coach manufacturing unit which would ensure accuracy and correctness of data.

Chapter 3 Application Controls

Audit Objective II – Review the Application Controls to assess the extent to which they ensure proper authorisation, completeness, accuracy and validity of input data and transactions

3.   Application controls are specific to a particular IT application and provide assurance to the Administration that transactions are properly authorised, complete and accurate, and validity of transactions, their maintenance and other types of data input controls are in place. During the course of scrutiny/analysis of ICMS database/records, the following deficiencies in application controls were noticed:

3.1   Deficiencies in integration between ICMS and other applications viz. PRS/COA/CGS etc.

It was seen that integration between ICMS and other passenger and train service related applications were not implemented completely, as a result of which output from the ICMS were not used in the field operations.

3.1.1   Non-utilization of ICMS for communicating Train Consists to PRS

As per ICMS documentation, data of train/rake consist is to be sent to PRS for PRS charting and it should be sent to PRS at least four hours before scheduled departure time of the train. Test check of records revealed that:

- Consists of all trains were not reported to PRS through ICMS. These were also not communicated four hours before the scheduled departure of the train.

- Manual system of communicating train consist to PRS was still in operation.

Delay in communicating train consists to PRS did not serve the intended purpose of utilising the train consists for correct train charting.

(Annexure 30a and 30b)

3.1.2   Non-Integration between ICMS and Coach Guidance System

Coach Guidance System (CGS) indicates the position of each coach from engine along with train number to help passengers to board the train. Even though coach position was available in ICMS, non-implementation of integration with CGS led to manual feeding of data in CGS, over NR, NER and CR.

3.1.3   Manual Data Feeding/Duplicity of Efforts- ICMS and COA

As per ICMS manual, COA and ICMS applications are interfaced with each other for exchange of information. However, despite having an interface the train detention reasons were being fed in both applications manually as seen in NR, SCR and SECR.

Thus, the integration between ICMS and other applications was not complete and effective which led to populating same type of data in different applications involving usage of additional manpower as well as chances of discrepancies. Moreover, despite having MIS highlighting discrepancies, remedial action was not taken by Railways and MIS were not being used.

3.2   Mismatch in data between ICMS and PRS

3.2.1   Differences in Public Time Table

Though ICMS has integration with PRS, while creating train profile in ICMS, time table details were fed in ICMS. Time Table details were also populated in PRS and ICMS. Review of ICMS-PRS Public Time Table (PTT) Mismatch Summary[84] of 18 February 2016 revealed 421 instances of mismatch between Public Time Table of ICMS and PRS over all Zonal Railways. This mismatch was again noticed in respect of 368 trains on 23 March 2016 over all Zonal Railways, which indicated that Railway Administration did not take remedial action to rectify the mismatch in timings in the two applications.

3.2.2 Differences in distances recorded in ICMS and other Databases

Differences in distances recorded in ICMS and PRS were noticed as follows:

- In ER, for 92 trains there was mismatch in distance in ICMS and PRS Database. The difference ranged between 1.01 kms to 31.94 kms.

- Report No. 987 of ICMS pertaining to NWR, NFR and NR was showing mismatch of distance in ICMS and Block section of Rates Branch System (RBS)[85].

- During comparison of distance between various stations, recorded in ICMS with Working Time Table distances, differences in the range of 2 kms to 81.59 kms were noticed between two sets of records on NR. A comparison of distances of three pair of trains, having same route details, revealed that there was a difference of 38 to 9.95 kms on NR.

3.3   Deficiencies in Master Data

3.3.1   Missing details in Coach Master Data

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 the master files of ICMS for the month of October 2015, it was observed that

- ICMS provided an online Report 'Missing Coach Master' for all Zonal Railways Gauge-wise, Vehicle type-wise (All, PCVs and OCVs) giving latest status of records of coaches for which important details like Base Depot, Base Workshop, Commissioning Data, Maximum Speed, Owning Division, POH due month, etc. During the check of the report dated 8 March 2016, it was noticed that, these basic details were missing in respect of 6845 records of all Zonal Railways ranging between 0 (NWR) and 720 (NR).

- ICMS data did not contain details of defence owned coaches of two[86] types even though the same were communicated by Defence department to Railway Board in 2014. The data was therefore incomplete.

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[84] Report No. 981
[85] A database of routes and distances in IR
[86] MLACCW and MGSCNY

3.3.2 Non-capturing of capacity of PCV type of coaches

Analysis of ICMS table containing details of Coach Type Master pertaining to all Zonal Railways revealed that Coach Capacity of 93 types of PCV (Passenger Carrying Vehicle) coaches was not defined in the Coach Type Master table. The coach capacity of 48 types of coaches was marked/defined in the database, but their seat/berth capacity was not defined. Coaches of ten types were defined/marked as composite class of coaches in the master database (viz. they had two type of classes) but number of seat/berth for both the classes in respect of six types of coaches were not defined/marked in the master data.

If the basic information about the coach viz. its seat/berth capacity is not captured correctly, the coach data cannot be used for its optimal utilization.

3.3.3 Non-availability of details of loco number in Master Data

As discussed with CRIS during the course of audit, Master data of locos is populated in ICMS from FOIS. It was seen that there were 1101 records containing 11 different loco numbers which did not appear in Loco Master Table.

Further analysis of these 11 locos with reference to the Loco Status Report in ICMS revealed that only one loco (No. 40241) belong to Passenger Service and remaining locos either belonged to Goods Service or the details were not available in the ICMS report. Data analysis of COA-ICMS-Loco table further revealed that out of 83396 records, 203 locos pertaining to 2916 records, were not available in loco master. Test check of these locos in ICMS loco status report on SER revealed that many of the locos were not available in the ICMS report or other locos pertained to Goods Service. Loco Master Data was, thus, incomplete.

3.4 Discrepancies in Coach/Train/Loco Attributes

The following application controls were found to be deficient resulting in incomplete and wrong data.

3.4.1 Non-validation of Coach data

As per Railway Board order (May 2006), Codal life of IRS and Steel Body Coaches has been fixed as 30 and 25 years respectively. As the date of built is basic data for calculation of age of a coach as on a given date, it should be available with every coach in Master Table. Condemnation of a coach depends upon the built date of the coach. Data Analysis of Coach Master revealed that

- In all Zonal Railways, 2445 coaches did not have coach built year in ICMS database which resulted in inaccurate MIS report relating to age-wise details of coaches. There were 1205[87] over-aged coaches on IR with age between 30 and 50 years.

- In respect of 315[88] coaches, coach factory turnout date was prior to coach built date.

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[87] Total 1205: CR-373, ECOR-34, ECR-36, ER-54, IR-16, KR-7, NCR-44, NER-28, NFR-28, NR-187, NWR-33, SCR-36, SECR-30, SER-116, SR-5, SWR-27, WCR-42, WR-109
[88] Total 315: WCR-1, NFR-2, NWR-3, SECR-3, NER-4, ECR-5, ECOR-6, CR-14, NCR-17, SWR-20, SCR-23, SR-23, SER-24, WR-24, NR-36 and ER-110

was captured in place of name of the workshop which condemned the coaches which indicated lack of controls to validate the data input. (WR, NR)**.**

3.4.4   Mismatch/Discrepancies in POH Due Years

Analysis of POH history data and coach master data revealed instances where data of POH due years captured in Coach Master table and POH History table were not matching (WR, NR). Test check revealed that in 55 instances, coach built year and Coach POH due year were same.

3.5   Non-validation of train/loco data

3.5.1   Lack of controls to validate Train Pipelines Confirmation Data

In respect of 666 trains owned by nine[96] Zonal Railways, the train pipeline (viz. route details of train) was confirmed but confirmation time was not captured and in 3325 trains of all Zonal Railways, Pipelines conformation time was captured but status was not confirmed as confirmation status flag was N. Thus, the system was capturing incomplete and inconsistent information and lacked adequate validation controls for capturing information.

3.5.2   Non-capturing of complete details for detention of trains

In case of detention of trains, ICMS provides facility to capture reasons for detention to enable Railway administration to take remedial action. Analysis of train detention data revealed that out of 364738 transactions, in 296 transactions of all Zonal Railways, detention codes (reasons) for detention/train loss were recorded but detention sub-codes/sub-reasons were not recorded. For example, there were four sub-reasons (Detention sub-code) for detention on account of weather (Detention Code – WEA[97]) but system did not enforce capturing of sub-reasons for weather. It was further noticed that in 590 cases of all Zonal Railways, remarks were not recorded.

(Annexure 32)

3.5.3   Wrong Description of Locos

In loco type table, the description of WDM3D type of loco was recorded as 'XXXXXXXXXXXXXXXXX'. There were 484[98] locos of WDM3D type, over 14 Zonal Railways for which description could not be ascertained.

3.5.4 Movement of sick coaches by wrongly marking them as fit coaches

It was noticed at Katihar station of NFR that coach No. ECR WGSCN 02244 (of ECR) was made sick on 30 January 2016 at 15:36 hours. Train examination revealed that the coach required major repair and was needed to be sent to its owning railway. In order to move the coach, the sick coach was marked as fit and released for attachment with rake. Thus, the sick coach was wrongly marked as fit for movement purpose and during the movement period, ICMS depicted wrong status of coach. Similar instances were noticed at WR and SCR also. This

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[96] NER-5, SR-30, NR-31, SCR-34, SECR-73, NFR-92, CR-107, NWR-120, WR-174
[97] WEA(Weather) – FOG (Fog), FL(Flood), CY(Cyclone), LD(Landslide)
[98] Total 484: SWR-7, ECOR-14, SER-15, ER-21, NCR-23, NFR-26, NER-31, WR-43, ECR-45, NR-50, SR-50, SCR-51, WCR-51, CR-57

showed that the user was not aware of the procedure to be followed for managing sick coaches in ICMS.

3.6   Discrepancies in data of Stations, Division, Yard, Base depot, Interchange Station and sick coaches

3.6.1   Station Details

Out of 12310 stations defined over all Zonal Railways, 4685 stations were not marked as valid as the value of their flag was zero and it also included stations having valid codes, such as JUC (Jalandhar City), PWL (Palwal), DR (Dadar), PNVL (Panvel) stations etc. Out of 7625 valid stations of all Zonal Railways, 143 stations in 47 divisions of IR had two to four station names. Due to inadequate data validation, 585 instances of duplicate station names with different station codes containing 289 station names were noticed on 67 divisions over IR.

Both ends of 7525 stations were defined as "End1"/"END1" and "End2"/"END2" which did not convey proper directions/ends of the station. Traction of 3668 stations of 73 divisions of IR was not marked.

In SR, the station name PONDICHERRY displayed under the profile of Train No.12898 still remains, though its name has been changed as PUDUCHERRY during 2006 itself.

Over NWR, analysis of 345 records revealed that base depot codes for 08 and 63 Locos were shown as GIM and PUEJ respectively but no base depots with such codes were available over NWR jurisdiction.

3.6.2   Discrepancies in Yard Data

Yards of NR, SCR were mapped wrongly to other Zonal Railways. Two yards of WR were wrongly mapped to station code of CR. Similarly, in WR, wrong mapping of stations with division/yard were noticed. Surat Yard was shown in Vadodara Division instead of Mumbai Central and Vadodara Station yard was incorrectly shown under Mumbai Central instead of Vadodara. In ECR, many instances of wrong mapping of yards were noticed. Yard code YD under Mugalsarai (MGS) division has been mapped to six different station codes though such yard code was available in MGS division.

3.6.3   Discrepancies in Interchange (IC) Station Data

In five[99] Zonal Railways, it was observed that 11 interchange stations were defined incorrectly between Divisions. Some of them did not even belong to the Zone. In SWR, data/information in respect of 28 out of 34 interchange stations was incorrect.

3.6.4   Multiple/Duplicate records of sick coaches

Analysis of data pertaining to the year 2015 containing sick operations details revealed that records having same coach ID, same coach event, same coach event date, same coach sick ID, same station were recorded multiple times ranging

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[99] NR - Okhla and Panipat, SCR – Nellore and Tenali Jn., ECR – Simariya and Patna, SER – Kharagpur and Ahmadnagar and ER – Barrackpore and Kalyanpur

from 2 to 33. The system, thus, failed to restrict duplicate entries.

3.7 Other areas where data was found to be illogical/invalid

3.7.1   Negative Lie Over Period

Lie over period is the period during which a rake is kept unused at a station or yard in between its use for scheduled trains. As per ICMS[100], 21[101] rake links had negative Lie Over Period which was not logical.

3.7.2   Non-capturing of movement details and showing invalid reasons for movement of Light Engine

During analysis of ICMS tables containing light engine movement related data, pertaining to SER and NR, it was observed that all the movements of Light Engine were not captured in ICMS. Data pertaining to ER, NCR and ECR showed invalid reasons such as 0, 1, 11,111, LE etc. in 66, 79 and 1228 records respectively.

3.7.3   Absence of validation in field "Validity To date" and "Validity From date"

Analysis of data pertaining to train validity details sent to COA (viz. data that was stored in pipeline table) revealed that there were 252 records where train "Validity To date" was prior to "Validity From date" and the difference was in the range of 1 day to 184 days. This shows absence of input control on these two dates.

3.7.4   Capturing of invalid data in ICMS

- In table containing data on train detention[102] instance were noticed where 'section_code' indicated same section codes e.g. BXN-BXN, SHM-SHM, ASR-ASR, ANVT-ANVT against different train numbers though the station codes should be different. (SER, NR)
- Data pertaining to loco enroute failure showed instances where Train Number contained alpha-numeric characters instead of numeric values.
- The Train Number[103] field had invalid data (such as /, 00000,00, A, P, B, S, D. /WL etc.).

3.8   Non-updation of Repair, Maintenance and Depreciation Charges

As per Para 869 of Indian Railway Finance Code Vol. I, inter railway adjustment is required to be done for the working expenses i.e. repair, workshop maintenance, depreciation and interest charges on provision of engines, on the basis of engine hour outage and on provision of passenger coaches on the basis of total kilometers earned though rakes/passenger coaches running on more than one railway system.

Review of the ICMS Report[104] as well as records of accounts department over

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[100] Report No. 962 (dated 20.06 2016)
[101] NR-1, CR-1, ECR-2, ER-4, NCR-1, NFR-2, SER-1, SR-6, SWR-3
[102] Dy_Train_Detention
[103] Table Name LOCO.COA_MU_LOCO_TRG_ON_DEP
[104] Report No. 808 and 1521

four[105] Zonal Railways revealed that the ICMS reports were not in use in their existing forms as the charges for the above mentioned elements were not found updated in ICMS as per extant orders[106] and the charges were being computed manually.

In respect of Report No. 1521, it was noticed that the rates for Repair & Maintenance and Depreciation charges were not dynamic viz. ICMS Report number 1521 depicted same rates when the report was viewed for different period of time/years, though the rates were different. Thus, the report gave incorrect information for different period of time/years.

(Annexure 33)

3.9 Helpdesk Services

There were 505 ICMS related complaints/grievances of different railways pertaining to October 2014 to October 2015 which were not resolved and pending for disposal on 7 October 2015. Out of 505 complaints/grievances, 256 complaints/grievances were registered between 7 October 2014 to 1 April 2015 viz. they were more than six months to 12 months old and remedial action was not taken. These complaints pertain to all the Zonal Railways[107].

(Annexure 34)

The above findings indicated that ICMS lacked adequate application controls to ensure data accuracy, consistency and completeness. The integration between ICMS and other applications was also not very effective to avoid manual intervention in the operations/data input.

During Exit Conference (October 2016), Railway Board agreed with the audit observations. As regards, mismatches in Time Table data in PRS and ICMS, it is stated that remedial action is being taken to rectify the mismatch.

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[105] NCR, ECR, NR, ER
[106] RB circulated rate of charges for adjustment of these elements for the year 2015 and 2016 vide letter No.F(C)
/2003/27/1 dated 30.04.2015 and 21.04.2016.
[107] Including Konkan Railway, Integrated Coach Factory and Railway Board

Chapter 4 IT Security

Audit Objective III– Review the IT Security to check the extent to which it is capable of reasonably protecting business critical information and assets from loss, damage or abuse

4.　　Railway Board formulated its Baseline IT Security Policy in April/May 2008 according to which subsidiary procedures and instructions were to be drawn by CRIS/Zonal Railways/individual units. The Baseline IT Security policy addresses various aspects of IT Security including Contingent Management Planning, use of licensed software and its updation, back-up policy, password management, version control mechanism, protection against virus/malware, setting up of IT Security Monitoring Teams and Incident Response Teams, environment and location security, equipment security, physical access control, data access right, user identification and privileges management, application development and maintenance security, internet security etc.

Audit of ICMS application security and related issues was conducted broadly keeping in view the IR Baseline Security Policy/CRIS IS Security Policy and best practices in IT environment. Audit visited 128 locations over various Zonal Railways and observed that:

4.1　　Physical Access Control

Access of unauthorised persons at the ICMS locations visited by Audit was not restricted in SR[108], SWR[109], NR[110], NCR[111], NER[112] and ECoR[113].

4.2　　Logical Access Control - User and Password Management

4.2.1　　Though passwords of the users were recorded in encrypted form, answers to the security questions for reactivation of user accounts were captured in legible form as observed in four[114] Zonal Railways. Even registration passwords of the users were in legible form[115].

4.2.2　　Password and user ID of the users created by CRIS were not communicated to CAO/FOIS office confidentially, but by writing them on the request letter itself, thereby compromising the password security.

4.2.3　　The login page of the ICMS did not restrict the number of attempts of login by users. In the absence of strong password controls, unlimited login attempts make it easier to break-in into the system using random password generator software.

4.2.4　　As per IT Security Policy of IR, the system administration password

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[108] At all selected locations visited during Audit
[109] At three ICMS locations at Hubli, Mysore and Vasco
[110] At all the selected ICMS locations of Delhi, Ambala and Firozepur divisions visited during audit. At Delhi Divisional Control Office CCTV camera were installed but bio-metric system was not found in use.
[111] At all selected locations visited by Audit
[112] At all the selected locations visited by Audit
[113] At two locations visited by audit [Waltair Control and Bhubaneswar (FOIS) Cell]
[114] NFR, SCR, CR, NR, NER
[115] NR, SCR, CR, SECR

should be a minimum of 10 characters and should be a combination of alpha numeric and special character. It was however, noticed that password standards being followed by CRIS ICMS group at Centralized Data Centre did not conform to the laid down IT Security Policy.

4.2.5 Creation dates of 22 users preceded their start date by 1 to 30 days and Start date of 245 users preceded their creation date which did not appear logical and indicated lack of adequate controls.

4.2.6 Requests for creation of user ID were entertained by NR Headquarters office over telephone. Records relating to authorisation for creation of user IDs and password were not available at Zonal Railway Headquarters in NR.

4.2.7 Over NR, at six ICMS locations, ICMS users were created in excess of requirement when compared to the number of ICMS terminals and the operational shifts of the users. There were five users at New Delhi location and ten users at Delhi Main location, but 26 and 71 active users were created in ICMS.

4.2.8 Over NR and SCR, 47 active users having same mobile number and date of birth had two to four user IDs. Rest of the particulars like Secret Question, Name, Address etc. were either almost same or had minor variations which indicated that the different user IDs pertain to the same person. Thus, the system lacked controls to ensure creation of unique ID for each user.

4.2.9 Users were created with vague names like Mr.lko, Mr.umb, Mr.dlli, Mr.CCM Database, Mr.PRC, Mr.KCG, Mr.CRSE, Mr.HYB, Mr. DRM_NAG, Mr. CTE, Mr.secrcme, Mr. CEGE, Mr. CSTE-SECR etc.(location/designation names) in the user master table (NR, SCR, SECR).

4.2.10 A number of incorrect/irrelevant user types such as 'DC' and 'SC' were found in the master table[116] containing user details without any description of such types of user in the database.

4.2.11 Users who had crossed superannuation age were found active in the system. Users below the age of 18 years (viz. born after 1 November 1997 and were between nine to 15 years) were also active. This indicated that the users' date of birth was not validated at the time of data capturing.

Over NR, test check at ICMS locations also revealed that at Zonal Headquarters office, Ambala, Ambala Control office and New Delhi, User IDs of retired/transferred officials were still active. Superannuated active users in NR were application users and also had privilege to modify application data.

4.2.12 Details of users were incomplete and details such as state, mobile number, railway phone number, ICMS email ID, designation, secondary email ID, address fields were left blank. The data was, thus, incomplete and not usable when required. (NR, SCR, NER, SECR)

4.2.13 One user ID/password was shared by three train clerks posted at Jodhpur (NWR). User IDs and associated passwords authorized for specific personnel at ICMS locations at Chennai, Chennai Egmore and Basin Bridge Jn. of SR were

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[116] MT_Users table

shared by more than one person. Four train clerks working at ICMS control office of Allahabad (NCR) had no individual user IDs/passwords and were using a common login ID/password. Over NR, WCR and SCER, each of the 13 locations[117] had just one User ID and each of the seven locations[118] had just 2 active User Ids. During location visits, it was noticed that all the users did not have exclusive user ID in NR[119].At Anand Vihar, on 18 April 2016, ICMS ID of a user[120] was in use even though she was not on duty during the morning shift. Over NER, user ID of a transferred official was in use at Kathgodam ICMS location.

4.2.14 Out of 26 active ICMS users created on CRIS accounts, having administrative privileges, 25 were active super users[121]. These users also included those who were transferred from CRIS ICMS group to other CRIS group(s), but were still active ICMS users with super user privileges. The super users with administrative privileges also included two dummy users created in the name of ICMSIRCA and PRSCHART. This indicated that no control was exercised to restrict access to ICMS in sync with the laid down functions/responsibilities/ duties of the users. This was in contravention to the IT Security Policy.

4.2.15 Analysis of ICMS Users' Registration Data revealed that 335 users were allotted registered code without user IDs to access the system. Out of these, 330 users were granted application level/report level access and 253 users had privilege to modify data of one or more modules of ICMS. Review of User Master Data revealed that nine users did not have registration code which included active users and superannuated users.

4.2.16 In 147 cases,[122] users log-in time to various ICMS modules was 3 days to 523 days old and users had not logged out from ICMS. It was further noticed that data in ICMS was being populated by users who had logged in but had not logged out from ICMS for a long period of time and their password had also expired. Though it was observed that ICMS forced a user to automatically log-out after a specific period of inactivity, as per ICMS database, these users were not automatically logged out even after logged-into ICMS for a period of 3 to 523 days.

Analysis of data[123] pertaining to users' session details as well as last login details revealed instances where user logout time preceded user login time. (NR, NER, WCR, SCR)

4.2.17 There was no record of login/logout of 407 active users[124] in the table containing user's Last Login details.

4.2.18 In response to audit query, CRIS provided designation wise duties and responsibilities of CRIS ICMS team rather than details of duties and

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[117] Meerut, Panipat, Patiala, Alambagh (NR) and six locations of SECR, three locations of WCR
[118] Jagadhari Workshop, Jammu Tawi, Hussainpur (NR), three locations of SECR, one location of WCR
[119] Anand Vihar, Ambala (CPRC and CTLC), Delhi Control (Coaching stock and CTLC), Jagadhari Workhops, Jammu Tawi, Delhi Sarai Rohilla
[120] Ms.Sushma
[121] A user having special privileges including privilege to create/manage new/existing users
[122] NR-84, WCR-15, SCR-48
[123] DT_Session and DT_Last_Login_Info
[124] SCR-80, SECR-5, NR-207, NER-115

responsibilities of individual official. Thus, it could not be ascertained whether duties and responsibilities of each official was segregated/separately defined.

4.3   Change Procedure/Management

As per IT Security Policy, all the IT Groups were required to develop procedures for effecting changes in the application software. However, ICMS group had not developed/formulated procedures for effecting changes in the ICMS software. As per the test check of CRIS records relating to changes made in the ICMS, no system/procedure for getting appropriate approvals before releasing the changes made in the ICMS in the online environment was found in place.

4.4   ICMS Documentation

As per the information made available by CRIS, CRIS has a User Manual on ICMS, Software Requirements Specifications (SRS) on COIS and System Design and Development (SDD) on COIS. CRIS did not provide any documentation on User Requirement Specification for PAM and COIS. CRIS also did not provide SRS for PAM. Even the SDD on COIS did not contain complete details of all the tables in use in COIS module including their table structure, linkage between various tables, description of various fields of ICMS tables, description of values used for various fields. User Manual was updated till December 2014 and was not found complete as it did not have details of the various reports generated by ICMS including their format, details of codes used in various reports, period for which various reports make ICMS data available to users etc. (NR, ECR)

4.5   Business Continuity Plan

4.5.1   Business Continuity Plan at CRIS Centralized Data Centre

ICMS is a Centralized Application and all the servers (Database server, Application Server, Web servers etc.) were installed at CRIS Headquarters office at Chanakyapuri, New Delhi. In order to ensure continuity of ICMS operations, CRIS started the process of implementing the Business Continuity Plan during 2011-12. In November 2015, CRIS submitted an Abstract Estimate for Disaster Recovery (DR) setup of ICMS application at a cost of ₹ 12.04 crore to Railway Board. As on 31 March 2016, the process for DR Setup was still going on.

In response to Audit query, CRIS stated (February 2016) that ICMS Data Backup Security Policy for new system, installed in October 2015 was under progress and review. It was further noticed that though daily back up was being taken up by ICMS team but no off line/remote site backup of ICMS was being maintained by CRIS ICMS group.

4.5.2   Business Continuity Plan at Zonal Level

No documented Business Continuity Plan was available in SWR, NCR, SCR, ECR, ECOR, ER, WR, NER, SER, NWR & SR. CRIS had procured new ICMS servers in February 2015. Though the server was made online in October 2015 the installation process was yet to be completed (March 2016). The following deficiencies were observed in the ICMS locations checked in audit:

(i)   Personal computers/desktops were used in ICMS locations of WR, SR,

NR and NER instead of thin clients. At NCR and ECR, thin clients were provided initially but these were subsequently replaced by desktop computers, making the system vulnerable to security risks and virus attacks, in the absence of anti-virus.

(ii)　Antivirus software was not in use over NER and NR[125]at most of the ICMS locations visited by Audit team and antivirus software was not found updated in CR.

(iii)　ICMS systems were not covered under Annual Maintenance Contract over SCR, SR, NR[126]. At ECR, warranty period of six PCs (out of 17) had already expired on 31st March 2016 and AMC for these six PCs with any of the agency was not found to be executed till date of audit. Codal life of three Thin Clients had expired on 31 March 2016 and process for replacement of these thin clients was yet to be started.

(iv)　Smoke detectors, fire extinguishers were not found at ICMS locations in NCR (5)[127], SR[128], ER[129], SCR[130], NR[131]and NER[132].

(v)　Dust/waste bins (fire hazards) were found to be placed inside the premises housing systems on which ICMS was installed and running. In the event of fire breaking out due to short circuit, sharp energy variations etc. there were no extinguishers available to douse the fire so as to save the information system assets (SR).

(vi)　As per Railway Board orders/instructions, media and route diversity is to be provided in all the FOIS projects to ensure continuous and smooth operations. Over NR, at almost all the locations visited by Audit, ICMS connectivity was provided by FOIS network but at none of the locations, standby/redundancy lines were made available. Users reported[133] connectivity problems. Records for Link/Connectivity Failure/Problems was not maintained over NR[134] and CR[135]. In SR though failure report register was being maintained in the ICMS locations test checked and the register contained information about network failure, system failure etc. details regarding rectification of failures, actual down time of the system were not available in the register.

(vii)　No UPS were provided at six ICMS terminals[136]. UPS provided[137] at five locations were not in working condition/had no power backup[138].

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[125] Except at Ambala (CTLC) where an free version of anti-virus was in use.
[126] Ambala (CPRC), Delhi(CTLC), Jagadhari Workshops, Jammu Tawi and Amritsar
[127] While Smoke Detectors were not available on all the locations, fire extinguishers were found at all the locations
[128] Smoke Detector and Fire Extinguisher not available at all locations visited.
[129] Smoke Detector was not available at all locations visited and fire extinguisher was not available at HWH/TNC
[130] Fire Alarm/Smoke Detector was available at 2 locations and fire extinguisher were available at all locations
[131] Except UMB Control office
[132] Smoke Detector were not found at all locations visited by Audit
[133] At New Delhi, Delhi Control office (CPRC), Anand Vihar, Ambala Control office (CPRC), Delhi Sarai Rohilla, Jammu Tawi
[134] At Mumbai CST and Mazgaon of CR and at locations visited by NR Audit team except at Train Branch at Delhi and Anand Vihar
[135] Mumbai CST and Mazgaon
[136] At Delhi Control office, Train Branch of Anand Vihar, Jammu Tawi, Amritsar
[137] At Train Branch of Delhi Sarai Rohilla, New Delhi, Delhi and Ambala
[138] Mazgaon

Adequate and proper furniture was not provided[139].

(viii) Over NR, SCR and CR, dust free environment was not available at 12 locations[140] and air conditioners were not available at 11[141] locations.

(ix) Water seepage problem was noticed at Train Branch at New Delhi, Delhi Main and Amritsar locations of NR and Guntakal of SCR which could adversely affect smooth ICMS operations.

Thus, the IT Security was deficient and physical and logical access controls needed strengthening. Change Management was not documented as per IT best practices and Business Continuity Plan was yet to be fully implemented.

During Exit Conference (October 2016), Railways agreed that access control is a weak area and they needed to work on strengthening the same. Railway Board also agreed to the audit observations. As regards audit recommendations, Railway Board stated that audit recommendations are useful and Railways would act upon them to improve the system.

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[139] At Control office of Ambala, Delhi (Coaching section), Train Branch of Anand Vihar, Ambala, Jammu Tawi, Delhi, Delhi Sarai Rohilla, Amritsar, Mazgaon Yard
[140] At Train Branch of Anand Vihar, Delhi Sarai Rohilla, Delhi, Ambala, Jagadhari Workshop, Secunderabad, Vijayawada, Guntakal, Guntur, Mumbai CST, Dadar Terminus, Mazgaon
[141] Anand Vihar, Delhi Sarai Rohilla, Delhi, Ambala, Jagadhari Workshop, Jammu Tawi, Amritsar, Mumbai CST, Dadar Terminus, Lokmanya Tilak Terminus, Mazgaon

Chapter 5 Conclusion and Recommendations

While punctuality monitoring is being done through ICMS, manual interventions still remain which have an impact on the quality and timeliness of data being fed. Complete data of all the trains was not available in ICMS and movement of some types of trains such as diverted trains, EMU trains in some Zonal Railways was not reported through ICMS for monitoring punctuality of all trains.

Train arrival/departure timings details at different stations are manually fed in Control Office Application (COA) and then updated in ICMS. This data is finally reflected in National Train Enquiry System (NTES) where passengers can see arrival and departure timings of the trains in real time. Delay in reporting of arrival and departure timings of trains and lack of accurate data of train movement led to inconvenience to passengers and generation of wrong MIS reports for Railway Administration which affected monitoring of train punctuality by the Railway Administration. It is recommended that

1. *Punctuality reporting of movement of trains which are not covered under ICMS may also be brought in the scope of ICMS.*

2. *Accuracy and real time updation of arrival/departure timings of trains may be ensured to provide accurate and reliable information to the passengers.*

Monitoring status of coaching stock in real time and online as well as planning and management of asset maintenance was continued to be done manually as the data in ICMS was not found to be reliable and complete. Data in respect of Coach POH and their sick/fit status was not updated timely and was, thus, inaccurate. Instead of using Management Information System (MIS) reports from ICMS a large number of reports were being prepared manually. Integration with other railway applications such as PRS, COA, CDS and CMS was not effective, as a result of which data updation was done through manual intervention and was not on real time basis. Important reports such as Vehicle Guidance Reports were also being prepared manually. As such, the objectives of implementation of ICMS were not fully achieved. It is recommended that

3. *Inconsistencies in arrival/departure timings in different modules of ICMS may be rectified to have accurate position of coaches. Accuracy, completeness and timely updation of all coach data and their movement details may be ensured and dependence on manual records may be gradually reduced.*

4. *Availability of the traffic demand (such as position of waitlisted passengers) may be facilitated in real time environment through ICMS so as to help Railways in augmentation of train composition on the basis of traffic demand, facilitate planning and running of special trains.*

5. *Provision to capture IOH details of coaches in the system may be created. Timely and accurate updation of coach POH data, sick and fit coach data and effective usage of POH/Sick/Fit operations through ICMS may be ensured.*

6. *Integration of ICMS and Crew Management System (CMS) may be ensured for generation of complete Vehicle Guidance reports so as to avoid manual intervention in the ICMS output.*

7. *Integration between ICMS and Passenger Reservation System (PRS), ICMS and Control Office Application (COA) and ICMS and Coach Display System (CDS) may be strengthened to have timely data updation and to avoid manual intervention.*

Application controls provide assurance to the Administration that transactions are properly authorised, complete and accurate, and validity of transactions, their maintenance and other types of data input controls are in place. As seen from the data and live operations checked during field audit ICMS lacked adequate input controls during data entry into the system which led to incorrect/invalid data being entered and also had deficient manual supervisory controls. Due to deficiencies in such controls data accuracy, consistency and completeness could not be ensured.

8. *Adequate validation and manual supervisory controls over data entry may be introduced in ICMS to ensure accuracy, completeness and validity of various types of data input and output.*

The IT Security was deficient and physical and logical access controls needed strengthening. Change Management was not documented and no system/ procedure for getting appropriate approvals before releasing the changes made in the ICMS was found in place. Business Continuity Plan was yet to be fully implemented.

9. *Physical and logical access controls may be strengthened.*

10. *Change Management procedures for updation and approval of changes may be laid down and changes documented.*

11. *Business Continuity Plan/Disaster Recovery Plan may be fully implemented so as to ensure that business critical information and assets are protected from loss, damage and abuse.*

(Nand Kishore)

New Delhi   **Deputy Comptroller and Auditor General**

Date:'4:'Pqxgo dgt'4238

Countersigned

(Shashi Kant Sharma)

New Delhi   **Comptroller and Auditor General of India**

Date: 4:'Pqxgo dgt'4238

Annexure 1[Para 1.8(a)]
Sample Size – List of selected ICMS locations of different Zonal Railways

Zonal Railway	Number of Locations	Names of ICMS Sites/Locations
NWR	9	i) CTNC-Ajmer ii) Carriage Workshop – Ajmer iii) CTNC-Lalgarh iv) CTNC-Jaipur v) Carriage Workshop - Jodhpur vi) TNC-Rewari vii) CTNC-Jodhpur viii) Divisional Control-Bikaner ix) Zonal Headquarters Control Office, Jaipur
ECoR	6	(i) FOIS Cell/Zonal Headquarters, Bhubaneswar (ii) Divisional Control Office, Khurda Road (iii) Divisional Control Office, Waltair (iv) Bhubaneswar Station (v) PuriStation and (vi) Visakhapatnam Station
ER	8	(i) Zonal Headquarters Control Office, Kolkata (ii) Howrah Division/control (iii) Tikiapara Yard (iv) Sealdah/Howrah Yard (v) Howrah Station (vi) Azimganj Station (vii) Katwa Station (viii) Asansol Station
NER	6	i) Kathgodam Station ii) Gorakhpur Jn. Station iii) Lucknow Jn. Station iv) Chhapra Jn. Station v) Divisional Control Office, Lucknow vi) Zonal Headquarters Control Office, Gorakhpur
NFR	7	i) Zonal Headquarters Control Office, Maligaon ii)Lumding Division (Control Office) iii) Katihar (Station) iv)New Jalpaiguri (Station) v)New Bongaigaon (Station) vi) Guwahati (Station) vii)Dibrugarh Town (Station)
SER	8	i) EMR/Control/Garden Reach ii) Coaching Control iii) DY.SMR/Adra iv) CTNC/Tata v) CYM/Kharagpur vi) CTNC/Shalimar vii) CTNC/Santragachi viii) DY.SS/Howrah

Zonal Railway	Number of Locations	Names of ICMS Sites/Locations
SR	10	i) CHC/CC (Punctuality) ii) ICMS/COIS/SEC iii) DY.SMR/Chennai iv) PERW & ICF/FUR v) Control/O/LTM/Chennai vi) BBQ/TNC/O/ Chennai vii) SA (Salem) viii) SMR/Trivandrum Central ix) Control/O/LTM/Madurai x) Sr.DOM/Tiruchchirappalli Jn
WCR	6	i) Zonal Headquarters Control Office, Jabalpur ii) Divisional Control Office Jabalpur iii) Jabalpur Jn. station iv) Kota Jn. Station v) Bhopal Jn. Station vi) Habibgaj Station
CR	7	i) Zonal Headquarters Control Office, Mumbai ii) Divisional Control, Mumbai iii) Mumbai CST Yard iv) Dadar Terminus v) Dadar Yard vi) LokmanyaTilakTerminus Yard vii) Mazgaon Yard
NCR	5	i) Emergency Control, NCR/ HQ, Allahabad ii) Agra Railway Station, Agra division iii) Emergency Control, Agra division iv)Tundla Railway Station, Allahabad division v) Emergency Control, Allahabad division
SCR	10	i) Zonal Headquarters Control Office , Secunderabad ii) Hyderabad Control Office iii) SSE/Lallaguda Workshop iv) ZRTI/Moula Ali v) Nanded station vi) Dy.SS Office, Guntakal vii) Dy.SS Office, Secunderabad viii) CDO/C&W Depot, Secunderabad ix) Dy.SS Office/Vijayawada x) Dy.SS Office/Guntur
SWR	6	i) Zonal Headquarters Control Office (Hubli) ii) Control Office - Hubli iii) Dy.SS - Hubli iv) Dy.SS - Vasco v) Control Office - Mysore vi) Dy.SS – Mysore
WR	13	Operating Department i) Zonal Headquarters Control Office Churchgate, Mumbai ii) Divisional Control Office, Rajkot iii) Stations -BRC, iv) VRL &

Zonal Railway	Number of Locations	Names of ICMS Sites/Locations
		v) NBVJ = 3 vi) Ahmedabad Yard, Surat vii) TNC Yard viii) IND Yard ix) W&S, Parel x) Coaching Depot, Mumbai Central xi) Coaching Depot GIM xii) Coaching Depot VRL xiii) Coaching Depot IND
ECR	9	i) Danapur Control ii) Dhanbad Control iii) SamastipurControl iv) Patna RRI v) Dibrugarh station vi) Samastipur station vii) Zonal Headquarters Control Office Hajipur(4 terminals), viii) Dhanbad station ix) Samastipurstation
SECR	7	i) Bilaspur Coaching Complex ii) RRI Bilaspur iii) Sr.DOM Office, Nagpur iv)CTNC/Gondia v) Durg Coaching Complex vi) Raipur Station lobby vii) Shadol Station
NR	11	i) Zonal Headquarters Control Office, Baroda House ii) New Delhi Control office (Division control), iii) New Delhi Railway Station, iv) Old Delhi Railway Station, v) AnandVihar Railway Station, vi) Delhi Sarai Rohilla Railway Station, vii) Ambala Division Control office, viii) Ambala Railway Station, ix) Jagadhari workshop Railway Station, x) Jammu Tawi Railway Station, xi) Amritsar Railway Station
Total	**128**	

Annexure 2 [Para 2.1.1]
Statement showing Punctuality Performance of Trains over different Zones as test checked by Audit during February 2016

S. no	Zonal Railway	Trains Scheduled for Reporting in ICMS	Trains Not Reported in ICMS	Punctuality Percentage during 2015-16 (up to February)	Punctuality Percentage During 2014-15	Punctuality Target fixed by R.B. for 2015-16	Remarks/ Details of Trains not reported
1.	NR	38811	548	70.33	78.57	90	470-PT, 24-M/ET, 6-ST, 48-NGT
2.	WCR.	3514	139	-	-	0	61-PT, 12-M/ET, 2-ST, 1-Election Special, 63 HS
3.	ER	20757	113	93.78	87.31	-	47-PT, 03- M/ET, 63-ST
4.	SWR	9205	8	94.72	93.09	96.42	3-PT, 5-M/ET
5.	CR	62078	26124	71.25	72.60	96	163 PT, 10 M/ET, 25951 ST
6.	NER	13715	110	80.93	78.91	90	79-PT(BG), 16-PT (MG), 15-M/ET
7.	NFR	6644	70	87.24	89.58		54-PT, 16-ME
	Total	**154724**	**27112**				

PT=Passenger Trains, M/ET=Mail/Express Trains, ST=Suburban Trains, BG=Broad Gauge, MG= MeterGauge, HS-Holiday Special, NGT – Narrow Gauge Train

Annexure 3 [Para 2.1.1]
Statement showing details of Trains Available in ICMS but Not in PRS

S. no	Zonal Railway	Number of trains available in PRS but not available in ICMS	Remarks
1	NR	6	Report No. 982 of 23.03.2016
2	WCR	1	Report No. 982 of 07.04.2016
3	SCR	3	Report No. 982 of 06.05.2016
4	NER	1	Report No. 982 of 29.04.2016
5	NFR	7	Report No. 982
6	SWR	5	Report No. 982 of 02.05.2016
	Total	**23***	

*Note: Train Nos. are 02504, 04972, 12063, 12064, 23010, 24512 (NR), 01705(WCR), 01094, 02795 & 07115 (SCR), 05116 (NER), 05615, 05616, 23154, 52540. 52541, 52544, 54545 (NFR), 02779, 06228, 06948, 07301, 56263 (SWR)

Annexure 4 (a) [Para 2.1.3]
Statement showing Difference in Exceptional Trains Reported by ICMS& COA

Zonal Railway	Total Exceptional Trains		Cancelled		Short terminated		Diverted		Change of Origin		Change of Destination		Remarks
	ICMS	COA	ICMS	COA	ICMS	COA	ICMS	COA	ICMS	COA	ICMS	COA	Date on which test checked
NR	220	56	192	40	12	9	7	0	9	3	0	4	14.03.2016
NCR	12	85	11	31	0	5	1	38	0	0	0	11	12.04.2016
ER	4	9	0	3	0	1	1	0	0	0	3	5	31.03.2016
WCR	6	11	6	9	0	0	0	0	0	0	0	2	04.04.2016
SCR	6	13	0	5	3	8	0	0	3	0	0	0	04.05.2016
SECR	14	7	11	3	2	1	1	0	0	0	0	3	14.03.2016
CR	20	36	9	22	5	6	3	0	3	0	0	8	14.03.2016
NER	0	3	0	0	0	0	0	0	0	0	0	0	22.6.2016
SER	0	0	0	1	0	0	0	0	0	0	0	2	12.10.2015
NFR	23	68	14	11	2	0	6	3	1	0	0	20	22.06.2016
Total	**305**	**288**	**243**	**125**	**24**	**30**	**19**	**41**	**16**	**3**	**3**	**55**	

Annexure 4(b)[Para 2.1.3]
Statement showing number of trains with status Not Reported/ Not Ascertained

Zonal Railway	Total Trains To be Reported	Number of Trains Reported in ICMS	No of Exceptional Trains	No. of Trains whose status could not be ascertained	Remarks
NR	558	520	37	1	ICMS Report for 17 February 2016
ER	726	723	1	2	ICMS Report for 31 March 2016
NFR	232	225	0	7	ICMS Report for 31 March 2016
Total	**1516**	**1468**	**38**	**10**	

Annexure 5 [Para 2.1.4]
Statement showing cases of delay in Reported Movement of Exceptional Trains

S. no	Zonal Railway	Number of Cases	Cases pertaining to trains of the concerned zone	Period of Delay/Remarks
1	NR	450	203	3 to 71 days
2	WCR	225	155	1 to 6 days
3	ER	292	198	3 to 72
4	SCR	0	78	3 to 11 days
5	SECR	6609	0	1 to 206 days
6	SWR	322	225	3 to 234 days
7	CR	22	9	1 to 36 days
8	NER	112	0	3 to 17 days
	Total	**8032**	**868**	

Annexure 6 [Para 2.1.6.1]

**Statement showing details of mismatch noticed between ICMS and manual records
in respect of Arrival/Departure timings**

S. no	Zonal Railway	Audit Observations
1	NR	As per test check at New Delhi, Amritsar, Jammu Tawi, AnandVihar and Delhi Sarai Rohilla, in 25 instances, the timings recorded in ICMS were earlier than the timings recorded in manual records and the difference was in the range of 5 minutes to 180 minutes. In 8 instances, the timings in manual records were earlier than ICMS records and difference was in the range of 5 minutes to 332 minutes.
2.	NFR	As per test check at NBQ, NJP, DBRT, DBRG, LMG & KIR stations, in 219 cases actual departure time did not match with the record of Station Master Diary and in 137cases, departure time of the train was earlier than the time in the Station Manager's manual Diary.
3.	ER	Train no.15630 (GHY-MS Weekly Express), started on 8/4/2016, was taken over by Asansol Division of Eastern railway at SNT on 9/4/2016 at 7:45 hours. Train arrived at UDL at 9:15 hours and departed at 9:22 for DGR. After performing journey of 28 minutes it arrived DGR at 9:50 on same day and departed at 10:07 hours towards UDL again. After performing journey of 28 minutes, train again reached UDL. But the system captured time of arrival of the train at UDL second time as 9:15 hours, ignoring the to and fro journey between UDL and DGR.
4.	SER	Differences were noticed in respect of arrival times of various trains.
5	SR	Mismatch in arrival and departure timings of suburban trains and mail/express between ICMS and manual system were noticed.
6.	NWR	Difference of 10-15 minutes was noticed in Train arrival time shown in PAM and recorded in "Punctuality Register" maintained in Station Masters office Jodhpur.
7.	CR	Departure/Arrival time data of DOWN and UP Trains, which were late by 15 minutes and above, consisting of 50 and 328 instances of delayed trains was collected from Station Manager's Diary for July, August, September 2015 of at Dadar(T) and LokmanyaTilak Terminus respectively and compared with the departure/arrival time fed in the ICMS. It was noticed that there were differences in the time recorded in Station Manager's Diary and the time fed in ICMS and the time difference ranged from 2 minutes to 2 hours and 20 minutes.
8.	WCR	During comparison, difference/inconsistency in the train timings recorded in the ICMS and those recorded in stations' manual records were noticed.
9.	SWR	At Mysore, there was difference/inconsistency in the train timings recorded in the ICMS and those recorded in stations' manual records. The difference ranged between 5 minutes to 87 minutes

Annexure 7 [Para 2.1.7.1]
Statement showing details of stations/stoppages available in PRS but not in ICMS

S. no	Zonal Railway	Stations in PRS, but not in ICMS	Remarks, if any
1	NR	60	Report No. 983 of 23-03-16
2	NCR	7	12.04.2016
3	SR	7	August 2014
4	NWR	3	16.09.2015
5	CR	9	12.04.2016
6	WCR	1	07.04.2016
7	SCR	3	06.05.2016
8	ECR	3	-
9	NER	32	Report No. 983
10	SECR	8	23.03.2016
11	SWR	52	Report No. 983 of 02.05.2016
12	NFR	2	24.05.2016
	Total	**187**	

Annexure 8 [Para 2.1.8]
Statement showing manually prepared reports used for monitoring Punctuality

S. no	Reports prepared manually	By Railways
1	Punctuality Performance (percentage) of Mail/Express, Suburban and Passenger Trains	NR, WCR, ER
2	Monthly Punctuality Performance Report	NR,WCR
3	Comparative Summary(Number of Trains) Reported Late	NR, WCR
4	Division wise Punctuality Performance of Mail/Exp. Trains, Passenger Trains	NR, WCR, ER
5	Cause-wise and Division-wise Mail/Express Trains lost in punctuality (Comparison), Current week/Last week, Train Lost Month wise and Cause wise on NR	NR, WCR
6	Assets failures causing loss of punctuality	NR, WCR, SR
7	Excess Section wise Engg. Restriction	NR, WCR
8	Summary of Diesel Loco Failure etc	NR, WCR
9	Traffic Density Statement	ER
10	Diesel KM/ Elec. KM(ER)	ER
11	Equivalent Failure Statement (Asset Failure) etc.	ER

Annexure 9 [Paras 2.1.10 and 2.2.9]
Statement showing instances of inconsistent/inaccurate ICMS Output

Zonal Railway	Details of inconsistencies/inaccuracies in ICMS output
NR	On 8 April 2016, ICMS Report No. 504 indicated that arrival of eight trains and departure of one train was not reported in ICMS at Ambala station. On examination of running movement of these trains in ICMS, ICMS depicted inconsistent details as is evident from one such example. On 8 April 2016, arrival of Train Number 74646 of 7 April 2016 was not reported in ICMS as departure of this train was not done at Amritsar (Report No. 504). On examining the running position of this train using Full Running option, Report No. 1002 indicated that departure of this train was not done from Amritsar on 7 April 2016 but the train departed right time from Jalandhar on 7 April 2016. When Train Running position of this train was viewed by selecting Textual option of Report No. 1002, ICMS indicated that this train departed right time from Amritsar and reached after a delay of 45 minutes at Ambala on 7 April 2016. Similar type of inconsistencies were also noticed when such reports were reviewed at Delhi Sarai Rohilla Station.
SECR	ICMS report for Train Running Position for train number 18240 of 06.05.2016 depicted two different timings for actual arrival at Bilaspur under the option "Textual" and "Full Running Report".
ER	On 16 June 2016, ICMS Report No. 504 indicated that arrival of 14 trains and departure of 7 trains was not reported in ICMS at Asansol station. On examination of running movement of these trains in ICMS, ICMS depicted inconsistent details. For example, on 16 June 2016, arrival of Train Number 53061 of 16 June 2016 was not reported in ICMS. On examining the running position of this train using Full Running option, Report No. 1002 indicated that departure of this train was done right time from BWN on 16 June 2016. When Train Running position of this train was viewed by selecting Textual option of Report No. 1002, ICMS indicated that this train departed right time from BWN and reached late at ASN on 16 June 2016 after a delay of 3 minutes.
SCR	On 13 May 2016, ICMS Report No. 504 indicated that arrival of three trains and departure of one train was not reported in ICMS at Hyderabad station. On examination of running movement of one of these trains viz., 67265, Push-Pull from WL to HYB Deccan dated 13.05.2016 the arrival time at HYB Deccan was not reported in ICMS as departure of this train was not indicated at the previous station viz., Khairatabad DCN station (NTES Train Running Report). On examining the running position of this train using Full Running option, Report No. 1002 indicated that departure of this train was not done from Khairatabad DCN station and so it's arrival time at HYB Deccan was not indicated. However, enquiries by Audit revealed that the train did reach Hyderabad Deccan at 9.45hrs as ascertained from the SS/HYB's office.
Wrong Loco information provided by ICMS	
NR	On 08-04-2016 at Ambala station, ICMS indicated under the Tab-'Train Ready for Departure' that loco number 13340 was attached with train number 54542 which was placed at Platform number one and with 64658 which was placed at Platform number 2. However, VG of these trains indicated that Loco number 13340 was attached with train number 54542 and not with train number 64548

SER	In "Loco Master Detail" window of CTNC/TATA, current status of the loco number 23990 in "Division" field was wrongly shown as "CKP" division though in respect of "current station", it was shown as "KGP" which is under KGP and In "Loco current status window" the current location of the loco was not reflected but the originating location. Loco number 25000 attached with train number 12703 on 15/10/2015 and the schedule departure of the train for the originating station at Howrah was 7:25 am, the actual location of the train as well as loco at the time of inspection (12:34 pm) was beyond JJKR but the current location of the loco was shown as "Howrah".

Annexure 10 [Para 2.2.1.1]
Statement showing non-depiction of actual Coach Position in Rake Composition

S. no	Zonal Railway	Audit Observations
1.	NR	• On 18.April 2016, coach No. 06179 and 10931 were available at station at Anand Vihar with status as fit and the same were physically attached with rake of Train No. 4402 but ICMS did not make them available for attaching with the rake of train No. 4402. • At AnandVihar, Coaches having numbers 143105 and 13142 were physically available on 18 April 2016 but ICMS indicated that these coaches were at Ambala. • At Delhi Sarai Rohilla and New Delhi stations, attachment/detachment of coaches/VPH coaches (enroute) were not found updated in ICMS. • As per ICMS, coach number NR-17228 was on rake of train number 14674 but as per JUDW records, the coach was under POH at JUDW shop on 7 April 2016.
2.	SER	• The following coaches were attached with train no. 18030 on 03.11.2015 at SRC (Shalimar Yard) whereas ICMS depicted the location of these coaches at location other than the Shalimar Yard on the same date as indicated below: | Number of coaches	Location	Railway
SER-GS-BG-998479	SUR	CR
WCR-RV-BG-80878	DLI	NR | • In train no. 18181, one VVN coach up to "BJU", was attached to the rake but ICMS did not accept this coach and the destination station of this coach was shown in the VG as "CPR".
3.	NFR	• At NBQ (NFR), VG generated at GHY for train No 55804(arrived at NBQ on 21.01.2016) was found to consist of 9 coaches, but consist of the train at NBQ exhibited 10 coaches. Coach No GS 10438 was found to exist in the system but as per 'Number Taker' register, the coach was not in the rake of train No 55804 on 21.01.2016, which was actually placed in the sick line at NBQ on 19.01.2016 which indicated that the consist of the train was not modified. • ICMS generated VG of Train No.55726 of 28.01.2016 consisted of 14 coaches but manual VG prepared consisted of 17 coaches. However, as per Number Taker register, rake consisted of 16 coaches. Coach No.10830 was not attached with the Rake which existed in manual VG.
4.	SR	• Passenger trains 56105/06 and 56107/08 between Karur and Salem were operated with seven coaches (actual consist). However, in ICMS the consist formation displayed only five coaches due to the reason that two coaches shop marked for POH could not be released by Division in ICMS. It was also observed that coaches shop marked for POH could be released only by PWP (Perambur north).
5.	NWR	• Discrepancies in Coach Number fed in Vehicle Guidance of ICMS and actual coaches received at locations were noticed in 12 cases. Instances noticed where coaches physically available in the Workshop, Ajmer for POH were shown running in regular Trains on same date at other station. • One coach (ML-107/93901) physically found available (from 17-8-2015) in Ajmer Workshop for POH was not shown in the ICMS on the date of inspection.
6.	CR	• As per Rake Link Booklet for Train No. 12140 (Sewagram Express), the train consisted of 24 coaches. 18 coaches from Nagpur to CSTM and 6 coaches to be attached at Wardha. The consist of this train was reviewed for the months of July, August and September 2015 and it was found that the enroute attachment of coaches at Wardha was not captured in ICMS.
7.	WCR	• As per manual verification at Jabalpur, Coach number CR 15705 GSLRD was available at Jabalpur on 09.06.2016 but ICMS indicated that this coach was available at Varanasi.
8.	ECoR	• At WAT control, type of coaches physically running in rake were not matching with the type of coaches shown in consist in the ICMS system,
9.	SWR	• As per ICMS data coach number GSCN 99391 and GSRD 07735 arrived by train number 12779, were in Vasco on 12.03.2015 where as these coaches were available at Banaglore on that day. • Coach number ACCN 11103 arrived by train number 12779 was in Vasco on 13.3.2015 whereas the same was physically available in NZM.

Annexure 11 [Para 2.2.1.2]
Statement showing incomplete depiction of Current Status of coaches

Zonal Railway	Total coaches	Current detail available	Disputed status*	Location on platform	Line number/ type not available	Position from end 1 was not available	Line number was zero	Remarks
NR	7975	7303	260	917	297	311	6	Disputed status of 49 of them was more than 12 to 36 months old
NCR	1625	1550	84	49	12	0	0	Disputed status of 32 of them was more than 12 to 37 months old.
ER	6519	4605	112	286	89	0	0	Disputed status of 49 of them was more than 12 to 36 months old
NFR	3474	3124	70	411	44	0	44	Disputed status of 7 of them was more than 8 to 22 months old
NWR	0	0	108	0	0	0	0	108 coaches were under disputed status since 30.9.13
WCR	1419	655	0	84	4	66	4	
SCR	5476	5372	234	474	98	113	0	Disputed status of 45 of them was more than 12 months old.
SWR	3546	3431	259	253	104	0	0	Disputed status of 36 coaches ranged between 12 and 32 months.
SECR	1492	1323	63	138	24	0	0	Disputed status of 13 of them was more than 12 to 36 months old.
ECR	0	0	153	347	70	0	0	Disputed status of 83 was more than 12 to 80 months old.
NER	3405	60	0	0	0	0	0	
CR	5163	2621	227	366	0	0	120	Disputed status of 50 coaches ranged between 12 and 36 months.
Total	40094	30044	1570	3325	742	490	174	

A coach is called disputed when a user marks the coach as 'Physically not arrived' while recording the arrival of a train.

Annexure 12 [Para 2.2.1.3]
Statement showing non-capturing of loading/unloading details of Parcel
Coaches/Vans of different Types such as VPH/VPU

Zonal Railway	Audit observations
NR	As per ICMS database, there were just 98 records of loading of NR owned VPH coaches during 2006 to 2015 (September) whereas as per manual records, 296 VP coaches were loaded at Delhi Station during July 2015 to September 2015.
ER	There are 968 High Capacity Parcel Vans including 3 'VPHX'. Out of 39 VPH coaches, only 11 coaches were offered for loading and they were loaded 1 to 23 occasions during a period of April 2008 to 2015 (October). In rest of the ER owned coaches, Coach ID was zero.
WCR	There were just 3 records of loading of WCR owned VPH coaches during 2009 to 2015 in the table containing loading/unloading details of VPH/VPU coaches.
SWR	There were just 52 records of loading of SWR owned VPH coaches. No records were available after August 2009.
CR	There were just 84 records of loading of CR owned VPH coaches during 2008 to 2013 whereas as per manual records, 43 VP coaches were loaded at one of Depot at Wadi Bunder during July 2015 to September 2015.

Annexure 13 [Para 2.2.1.4]
Statement showing incorrect Train placement data

Zonal Railway	Audit observations
NR	At Anand Vihar station, train number 22408 was placed at platform number one on 18 April 2016 but as per ICMS, it was placed at platform number five. At Delhi Sarai Rohilla, ICMS indicted that train number 12986, 14008, 12616 and 09726 were placed at platform number one, two, three and four whereas these trains were not physically available on these platforms. Thus, actual position of trains was not depicted by ICMS.
NWR	At Lalgarh station of Bikaner division (on 08 December 2015), running coaching stock (Trains) actually found on lines/platforms and their position shown in the ICMS was not matching
CR	At Mumbai CST, as per ICMS, coaches were available in spare line, however, during joint inspection, it was seen that no coaches were available at the locations.
SWR	It was observed during field visit that on 13/06/2016, as per ICMS record Rake of Train no. 16535 was placed at PF NO.2 whereas the rake was physically available at PF No.5. Similarly, rake of train no. 16230 was shown to be at PF No.4, while the same was at Yard. Thus, ICMS was not depicting actual position of the train.
SR	Six pit lines were actually available in TVC for placement of rake/train. However, only 5 pit line were available for the Train Clerks to make entry in the Data Module.

Annexure 14 [Para 2.2.1.6]
Statement showing non-capturing of complete status of Condemned coaches

Zonal Railway	Total Coaches	Coaches having Condemnation dates	Condemnation dates prior to October 2015	Coaches having marked as RECDMN(out of column '4')	Coaches marked online (out of column 4)	Coaches having null status (Out of column 4)	Coaches condemned during 2013-14 and 2014-15 (As per ICMS database)	Coaches condemned during (as per manual records/ Information made available by railways)	Duration when condemned (As per Manual Record/Information made available by railways)
NR	7975	1212	170	80	77	13	411	268	13-15
ER	6519	1547	32	20	12	0	339	110	13-14
NFR	3474	52	4	3		1	139	90	13-15
CR**	0	0	0	0	0	0	0	0	0
WCR	1634	231	7	0	7	0	89	95	13-15
SCR	5476	1130	0	0	1077	53	0	0	
SWR	3546	540	19	1	18	0	68	65	13-15
SECR	1492	11	4	0	2	1490	0	68*	13-16
NER	3405	1368	117	0	0	117	87	216	
Total	**33521**	**6091**	**353**	**104**	**1193**	**1674**	**1133**	**912**	

*Out of 68, 51 were condemned during 2013-15, **Over CR, 75 condemned coaches were appearing in the ICMS database with status "FITAVL /ONRAKE /INSHOP /DISPUTE/ ORUNTR/ SHOPCH/ RECDMN/ SICKCH". On this being pointed out by Audit, Central Railway Administration informed in February 2016 that the condemned coaches have sincebeen removed from the ICMS database.

Annexure 15 [Para 2.2.1.6]
Statement showing coaches having expired Condemned dates in ICMS in Use

Zonal Railway	Audit observations
NR	• Almost all the coaches having expired condemnation dates with null/online status were part of the current/live data, were in operations and available for usage • As per ICMS database, POH of 121 coaches, having expired condemnation dates and majority of them (63) recommended for condemnation, was performed after their condemnation date.
SR	• Out of 390 records, in 19 records condemnation dates of SR owned coaches has preceded the last POH dates. • One ART type coach (number 77876) which was condemned on 23-09-2013 by the Mechanical Department had not been deleted and was still shown up in the coach current stock. • Coaches condemned during August 2015 and September 2015 by the Mechanical Department were also available in ICMS and appeared in coach current stock.
NFR	• In one coach POH was performed after its condemnation date.
SWR	• POH of six coaches was performed after the expiry of their condemnation dates.
SECR	• POH of one coach was performed after condemnation date.
ECR	• POH of three coaches performed after their condemnation dates. • Status of one coach was on line although the date of condemnation of the coach had already lapsed in 2013.
ER	• Almost all the coaches having null/online status were in use even after the expiry of their condemnation dates recorded in ICMS. • POH of 121 coaches, having expired condemnation dates and a majority of them (20) recommended for condemnation, was performed after their condemnation date. • POH of two coaches was performed after the date of condemnation. In 12 cases reason for condemnation were not been entered.
NER	• POH of 40 such coaches was performed after their condemnation date.
CR	• All the 109 coaches after expiry of condemnation date were in use. Out of these, in respect of 14 coaches, POH was done after the date of condemnation.
WR	• One coach condemned in 2012 was available in ICMS Coach Master Data.

Annexure 16 [Para 2.2.3]
Statement showing differences in Train Arrival/Departure timings
recorded in COIS and PAM

Zonal Railway	Audit observations
NR	• Out of 47765 transaction of Arrival Time pertaining to five divisions of NR for the period 1 July 2015 to 7 October 2015 compared, in 22854 transactions, differences were noticed in Train Arrival Time. In 21019 records, COIS Train Arrival time was earlier than PAM time and difference was in the range of 1 minute to1719 minutes and in 1835 transactions, COIS Arrival time was later than PAM time and difference was in the range of 1 minute to 6010 minutes. • Out of 50764 transactions of Departure Time pertaining to five divisions of NR for the period 1 July 2015 to 7 October 2015 compared, in 11124 transactions, differences were noticed in Train Time. In 10350 transactions, COIS departure time was earlier than PAM time and difference was in the range of 1 minute to 5795 minutes and in 774 transactions, COIS departure time was later than PAM time and difference was in the range of 1 minute to 131 minutes.
SECR	• Over SECR, as per test check, out of 11765 transaction of Arrival Time pertaining to three divisions of SECR compared for the period 1 July 2015 to 7 October 2015, in 3044 transactions, differences were noticed in Train Arrival Time. In 529 transactions, COIS Arrival time was earlier than PAM time and difference was in the range of 1 minute to 302 minutes and in 2515 records, COIS Arrival time was later than PAM time and difference was in the range of 1 minute to 1090 minutes.
CR	• On CR, out of 27947 transactions of Arrival Time pertaining to 5 divisions of CR compared for the period 01.07.2015 to 07.10.2015, in 6672 transactions, differences were noticed in Train Arrival Time. In 4871 records, COIS Arrival time was earlier than PAM time and difference was in the range of 1 minute to 8851 minutes and in 1801 records, COIS Arrival time was later than PAM time and difference was in the range of 1 minute to 1025 minutes. • Out of 28497 transaction of Departure Time pertaining to five divisions of CR, compared for the period 1 July 2015 to 7 October 2015, in 3372 transactions, differences were noticed in Train Arrival Time. In 2545 records, COIS Departure time was earlier than PAM time and difference was in the range of 1 minute to 5760 minutes and in 827 records, COIS Departure time was later than PAM time and difference was in the range of 1 minute to 300 minutes
ER	Analysis of ICMS data pertaining to arrival and departure for the period from July 2015 to October revealed that in 41 cases actual departure time was earlier than actual arrival time and the difference ranged between 1 minute and 1066 minutes.

Annexure 17 [Para 2.2.5.1]
Statement showing discrepancies in the Vehicle Guidance Summary

Zonal Railway	Audit Observations
NR	• At Ambala Division on 8 April 2016, loco number 14067 was replaced with loco number 22719 in Train number 11058 at 15:22. However, VG generated after replacing loco at Ambala station, still showed loco number 14067 instead of loco number 22719. Thus, the change was not reflected in the VG. • Coaches of Train Number 12925 get detached at Ambala division but no VG was generated after detaching coaches at Ambala division.
SR	• As per Railway Board instructions, only system generated Vehicle Guidance were to be issued from 1 August 2010, still manual VGs were used. • Rake link for the train No.56241 SA-YPR was not available due to mismatch in train consist between SWR and SR, as received in ICMS. The mismatch was due to the reason that the ICMS location concerned in SWR did not place the link rake in the ICMS while despatching the train from YPR. Therefore, vehicle guidance was manually prepared for despatching the train. • For train number 11063 (MS-MTDM) slip coach (56100) for the section SA-MTDM was to be attached and similarly for train No.11064 (MTDM-MS) slip coach (56101) for the section MTDM-SA was to be attached. Though provision for attachment of slip coach exists in ICMS, due to non-availability of adequate time between receipt and despatch of these trains, slip coaches could not be entered in ICMS. Thus the train consist generated by ICMS was not reliable and manual VG prepared.
CR	• In respect of train No. 12534 of Start Date 08/09/2015 (VGs No. 7147560), actual coach attached with the Train was NR GS 14406, but ICMS was not accepting the above coach details as the same was attached to some other Train in ICMS. Hence, VG was prepared using wrong coach number NR GS 12579 and the actual Coach number NR GS 14406 attached to train was entered in the "Remarks" column of VG. • Analysis of ICMS data for July, August, and September 2015 revealed 1093 instances where the actual Coach Number was wrongly entered in the "Remark Column rather than in the relevant coach column which could be due to non-availability of details of coaches, physical attached with the Train, in ICMS.
NFR	• Train No.75718 (DEMU) ex-Haldibari to Siliguri moved on 29.07.2015 with train consist that did not match with the VG. Moreover, loco attached with DEMU train was 12699 WDG (BG class) which was not a DEMU loco and was not reflected in the VG.
ER	• In the cases of non-availability of a coach in the Coach Master of ICMS, the number of the coach was to be collected from stock and after generation of VG, the coach number so collected was to be recorded in the VG manually.
NER	• There was no field to capture details of Portable Control Phone (PCP), Fire Extinguisher (FE), Emergency Light Fitting (ELF), Katta (Wooden Block for Gradient Section) and these details were manually entered in VG at Kathgodam location of NER.. • At Gorakhpur, Train No. 12555 dated 02/04/2016, running from Gorakhpur to Hisar consisted of 24 coaches but in Vehicle Guidance(VG) generated through ICMS for this train, only 23 coaches were captured and coach GSCN 13311 was manually entered in Vehicle Guidance.
NWR	• At 04 locations test checked discrepancies in Coach Number fed in Vehicle Guidance of ICMS and actual coaches received at locations were noticed in 12 cases.

Annexure 18 [Para 2.2.5.2]
Statement showing details of VGs generated with incomplete details

S. no	Zonal Railway	Period	Driver Field blank	Guard Field blank	Loco	Remarks
1	NR	01/07/2015 to 15/10/2015	40569	40876	7816	
2	NCR	01/07/2015 to 15/10/2015	10000	9980	680	
3	ER	01/07/2015 to 15/10/2015	37004	37075	5343	
4	ECoR	01/07/2015 to 15/10/2015	5199	5199	0	
5	NWR	01/07/2015 to 15/10/2015	4124	4818	163	
6	WCR	01/07/2015 to 15/10/2015	7669	7673	321	
7	SCR	01/07/2015 to 15/10/2015	38687	38520	14755	
8	SWR	01/07/2015 to 15/10/2015	23281	23283	3109	
9	SECR	01/07/2015 to 15/10/2015	9641	9742	7618	Data like DR, GD, H.C, VVVV, dr, xyz, 600, A, B, BSP, D, ,K, KK, KS, M, Mr. Shri etc. noted in Driver and Guard field
10	ECR	01/07/2015 to 15/10/2015	1340	1317	398	
11	CR	01/07/2015 to 15/10/2015	15078	8860	158	
12.	NFR	01/07/2015 to 15/10/2015	11917	10230	815	Data like n, SH, Shri noted in Driver and Guard Field
	Total		**204509**	**197573**	**41176**	

Annexure 19 [Para 2.2.5.3]
Statement showing details of manually prepared VG Summary

Zonal Railway	Audit observations
NR	• In NR at ASR station, printer was out of order since 1.4.2011 and VGs were being prepared manually. • At Jammu Station, printer was found out of order during April 2016 and VGs were being prepared manually.
ECR	• In ECR, VG was prepared manually at RJPB and DBG locations where printers were not working.
NER	• While going through Vehicle Guidance Summary prepared during the month of April 2016 at Gorakhpur Station, in respect of 12 instances (6 regular trains and 6 special trains) VG was prepared manually and no reason was assigned for manual preparation of VG.
SCR	• In SCR, printer at SC station was out of order for a long time and VGs were being prepared manually. At NED station, the ICMS operations were being carried out from the control office, hence, VGs were being prepared manually.
CR	• In CR, in the offices of Chief Yard Master, Mumbai CST, Dadar and LTT, VG details were fed into the ICMS but the details were once again written manually to hand it over to the Guard. The reason for manual preparation of VGs was not availability of a functional printer. • There were 6893 VGs prepared in the system in the above stations. Out of these in 1841 cases VGs were not printed, resulting in preparation of VGs manually.
SWR	• In SWR, the data was being populated in both the applications manually.
SR	• It was observed that rake link for the train No.56241 SA-YPR was not available due to mismatch in ICMS. Therefore vehicle guidance was manually prepared for despatching the train. The mismatch was due to the reason that the ICMS location concerned in SWR did not place the link rake in the ICMS while despatching the train from YPR. • For train number 11063 (MS-MTDM) slip coach (56100) for the section SA-MTDM is to be attached and similarly for train No.11064 (MTDM-MS) slip coach (56101) for the section MTDM-SA is to be attached. Though provision for attachment of slip coach exists in ICMS, due to non-availability of adequate time between receipt and despatch of these trains, slip coaches could not be entered in ICMS. Inclusion of slip coaches had to be done manually and hence only manual VG prepared
NFR	• ICMS is installed at Route Relay Interlocking (RRC) cabin at KIR and TNC office is situated at PF3 & PF4. As a result, the details of each attachment/detachment is communicated over phone to ICMS users. VG is prepared manually at TNC office. Though VG is generated through the system but the same cannot be printed as no printer has been provided at KIR location. • At NJP, VG is prepared manually as there is no interface between printer driver and the application.
WR	• It was noticed that printer at New Bhuj station was out of order and VGs were being prepared manually. At Bharuch station,VGs were being prepared manually for want of ICMS terminal.

Annexure 20 [Para 2.2.6.1]
Statement Showing Inconsistent/Incorrect Loco Master Data

Zonal Railway	As per ICMS database (No.)				As per Manual Records (No.)				Remarks
	Electric Loco	*Electric Loco Type*	*Diesel Loco*	*Diesel Loco Type*	*Electric Loco*	*Electric Loco Type*	*Diesel Loco*	*Diesel Loco Type*	
NR	384	8	653	20	376	6	566	8	1036 locos were of gauge type one and one loco was of gauge type four. Out of 1037 locos, 29 locos were dead, 29 locos were in failed condition and 1 loco was idle.
NCR	409	5	197	13	414	5	134	5	603 locos were of gauge type 01 and 03 locos were of gauge type 4. Out of 606 locos, 03 locos were dead and 08 locos were in failed condition.
WR	0	0	532	16	0	0	420	6	ICMS showed 67 MG diesel locos of YDM4 and YDM4A types on Western Railway whereas the figure given by Board vide their letter dated 5/10/15 showed 62 MG locos without specifying their types.
ER	254	6	448	13	240	5	384	8	
NFR	0	0	449	13	0	0	375	6	404 locos were of gauge type 1, 27 locos were of gauge type 2 and 18 loco was of gauge type 4. Out of 449 locos, 8 locos were dead, 19 locos were in failed condition and 422 loco was normal.
WCR	631	8	456	9	588	6	394	10	1087 locos were of gauge type 1. Out of 1087 locos, 15 locos were in failed condition and 2 locos were idle
SCR	597	7	649	12	578	7	596	8	
SECR	235	0	226	0	214	0	193	0	
SWR	0	0	353	8	0	0	153	6	
ECR	0	0	405	0	391	0	0	0	
NER	0	0	324	13	0	0	231	10	
CR	655	11	396	9	607	11	297	6	

Annexure 21 [Para 2.2.6.2(a)]
Statement showing Wrong Loco position

Zonal Railway	Audit observations
NR	• On 1.4.2016, as per Delhi Control office record, Loco Number 22301 was available in Delhi Division but as per ICMS database, this loco was in Kota Division. • Loco Number 22568 was physically available at Delhi Division but as per ICMS, it was at TPJ. • As per manual records, Loco No. 16272 and 14003 were in Delhi division on 21 April 2016 but as per ICMS these locos were in UMB Division and HSX respectively. • Similar types of instances of wrong position of locos (e.g. Loco number 22029 and 21883) were noted on 6 April 2016 at Control office at Ambala.
NFR	• Loco status reflected that loco No 14860 was 'Shed In' at LMG location on 24.02.2016 at 18:10 hours whereas, the loco physically located at NGC shed at same date and time. Subsequently, the user at LMG Control office input the 'Shed Out' time (expected) as 25.02.2016 00:30 hours in advance to release the loco from shed at LMG. In this connection, it is observed that there is no BG Loco Shed at LMG, which is a MG shed which clearly indicated that the wrong programming logic as well as creation of virtual shed (Non-exist shed) in the ICMS. As such the system failed to capture the real time data.
SER	• Over SER, it was noted that particulars of loco were maintained by Loco control office but due to non-supply of loco particulars to coaching control, Vehicle Guidance (VG) were generated by giving fictitious loco numbers in Dy.SMR/ADA location.
CR	• Test check revealed 10 such instances where locos were physically available at a particular location while the ICMS showed their availability at different location.(January to May 2015)
WCR	• Loco number 28159 was available in Jabalpur division but as per ICMS database, this loco was in Bilaspur division. • Loco number 23825 was available in Jabalpur division but as per ICMS database, this loco was in Allahabad division.

Annexure 22 [Para 2.2.6.2 (b)]
Statement Showing Instances of Non-capturing of Movement of Locos

Zonal Railway	Number of Loco Cut-in instances noticed	Date on which test checked
NR	170	22 March 2016
NCR	54	22 March 2016
WCR	38	06 April 2016
SCR	59	6 May 2016
ER	726	May 2016
SECR	24	12 June 2016
SWR	38	02 May 2016
CR	77	18 May 2016
NER	35	22 June 2016
NFR	390	19 July 2016
ER	3	31 March 2016
TOTAL	**1614**	

Annexure 23 [Para 2.2.6.2(c)]
Statement showing cases of Electric Loco running over Diesel Track

Zonal Railway	Numbers	Date on which test checked
NR	11	18 February 2016
	12	09 March 2016
	29	06 April 2016
NCR	6	12 March 2016
SCR	1	23 December 2015
	1	04-May 2016
ECR	6	02 November 2015
	6	10 March 2016
WCR	2	07April 2016
	1	27April 2016
SWR	4	01May 2016
CR	5	18 May 2016
NER	2	22 June 2016
ER	2	31 March 2016

Annexure 24 (a) [Para 2.2.7]
Statement showing mismatch between
ICMS Coach Master Data and Manual Coach Master Data

Zonal Railway	Gauge	Number of Coaches		Date on which test checked
		As Per ICMS	*As per Manual Coach Master Data*	
NR		7975	6160	07 October 2015
		8147	6235	29 February 2016
NCR	BG	1625	1227	16 May 2016
NCR(BG)	NG	0	64	
WR(BG)		6535	4562	23 March 2016(as per RB)
			4714	(as per Dy.COM CCG)
WR(MG)		558	548	
WR(NG)		14	100	
SR		7675	7803	22 March 2016
ER		6519	4152	07 October 2015
		6626	4152	08 April 2016
NFR		3474	2837	
CR		4485	4414	01 January 2016
		4511	4437	01 February 2016
SCR		5476	4722	September 15
SWR		3546	3527	September 15
ECoR		2764	2637	30 September 2015
WCR		1314	1281	27April 2016
SECR		1492	1526	7 October 2015
ECR(BG)		3878	3756	
ECR(MG)		301	171	
NER(BG)		2640	2326	
NER(MG)		765	508	
NWR		2452	2611	as on 9 October 2015

Annexure 24(b) [Para 2.2.7]
Statement showing inconsistencies in data of Transferred coaches

Zonal Railway	Year	No. of coaches transferred from foreign Railway (As per ICMS)	No. of coaches transferred from foreign Railway (As per manual record)	Difference	No. of coaches transferred to foreign Railway (As per ICMS)	No. of coaches transferred to foreign Railway (As per manual records/Information provided by Zonal Railways)	Difference
NR	2013-14	62	4	58	120	99	21
	2014-15	18	30	-12	35	14	21
NCR	2012-13	0	0	0	1	0	1
	2014-15	1	0	1	0	0	0
WCR	2013-14	0	0	0	0	0	0
	2014-15	7	0	7	10	0	10
	2015-16	0	0	0	0	19	-19
SCR	2013-14	18	23	-5	3	23	-20
	2014-15	1	0	1	0	0	0
	2015-16	0	27	-27	2	18	-16
SWR	2013-14	27	21	6	7	65	-58
	2014-15	19	0	19	19	0	19
	2015-16	0	0	0	0	9	-9
SECR	2013-14	0	0	0	0	0	0
	2014-15	8	8	0	0	0	0
	2015-16	6	6	0	0	0	0
ECR	2013-14	1	0	1	1	0	1
	2014-15	8	0	8	26	0	26
CR	2013-14	10	117	-107	14	35	-21
	2014-15	12	0	12	7	2	5
NER	2013-14	05	08	-03	00	00	00
	2014-15	00	10	-10	05	00	06
ER	2013-14 to 2015-16	27	17	10	21	15	6
NFR	2013-14	61	2	59	40	1	39
	2014-15	0	17	-17	1	0	1

Report on Integrated Coaching Management System

Annexure 24(c) [Para 2.2.7]
Statement showing incorrect details of New Coaches in ICMS

Zonal Railway	Year/ Period	Coaches added (as per ICMS)	Coaches added (as per the information/records made available by operating/mechanical department)	Difference	Remarks
NR	2013-14	1099	495	604	As per master database, out of 7975 coaches, only 3419 coaches had dates on which they were added in master data
	2014-15	382	388	-6	
NCR	2013-14	142	138	4	
	2014-15	119	94	25	
	2015-16	61	55	6	till Sep 2015
WCR	2013-14	122	43	79	
	2014-15	73	54	19	
SWR	2013-14	311	81	230	
	2014-15	293	295	-2	
	2015-16	3	57	-54	till Sep 2015
SECR	2013-14	128	114	14	
	2014-15	87	47	40	
	2015-16	76	38	38	till Sep 2015
NER	2013-14	244	189	55	
	2014-15	238	217	21	
NFR	2013-14	161	118	43	
	2014-15	251	214	37	
Total		**3790**	**2637**	**1153**	

Annexure 24 (d) [Para 2.2.7]
Statement showing differences between ICMS data and manual records of Yard Stock

Zonal Railway	Audit observations
NR	At DEE (19.4.2016), DLI (4.4.2016), ANVT (18.4.2016) and UMB (8.4.2016) ICMS locations, comparison between ICMS and manual records in respect of yard stock revealed mismatches between two sets of same type of data.
NFR	As per ICMS, at NJP, on 30.01.2016, 38 number of spare stock were available whereas Trains Branch record reflected there were 40 coaches available at yard. At Katihar, yard stock summary dated 31.01.2016 exhibited 15 number of spare stock in ICMS but manually, spare stock showed 18 coaches. The 3 number of coaches viz. SC VPU 93830, WR VPU 008690 & ER VPU 01844 were not available in the system but physically existed at the yard.
WCR	Data available in manual records of yard stock of Jabalpur did not match with ICMS data.
SWR	During comparison of yard stock data available in manual records of MYS yard, it was noticed that the details were not matching with ICMS data
NWR	One coach (ML-107/93901) physically found available (from 17-8-2015) in Ajmer Workshop for POH was not shown in the ICMS on the date of inspection.
WR	During comparison of yard stock data available in manual records of Indore yard, it was noted that yard stock details were not matching with ICMS data.

Annexure 24 (e) [Para 2.2.7]
Statement showing differences in manual and ICMS records of PCV/OCV Coaches

Zonal Railway	As per ICMS			As per Mechanical/Operating Dept. Records			Difference
	PCV	*OCV*	*Total*	*PCV*	*OCV*	*Total*	
CR	56	43	99	53	32	85	14
ER	41	30	71	59	8	67	4
NCR	25	20	45	23	15	38	7
NER	33	21	54	21	3	24	30
NR*	61	41	101	58	8	66	35
SCR	37	34	71	28	17	45	26
SECR	26	23	49	29	21	50	-1
SWR	41	31	72	44	22	66	6
WCR	46	0	46	20	0	20	26
Total	**367**	**245**	**612**	**335**	**126**	**461**	**151**

* BG coaches only

Annexure 24(f) [Para 2.2.7]
Statement showing differences in Manual and ICMS records of coaches (gauge-wise)

Zonal Railway	As per ICMS				As per Mechanical/Operating Dept. records				Difference
	BG	*MG*	*NG*	*Total*	*BG*	*MG*	*NG*	*Total*	
CR	7046	0	0	7046	5304	0	67	5371	**1675**
ECR	3884	301	0	4185	3756	171	0	3927	258
ER	6519	0	0	6519	4152	0	0	4152	2367
NCR	1625	0	0	1625	1227	0	64	1291	334
NFR	3008	411	55	3474	2856	100	64	3020	454
NR	7834	0	141	7975	6048	0	179	6227	1748
NWR	2785	261	0	3046	2654	174	0	2828	218
SCR	5476	0	0	5476	4722	0	0	4722	754
SECR	1338	0	154	1492	1289	0	237	1526	**-34**
WCR	1498	0	0	1498	1281	0	0	1281	217
WR	6535	558	14	7107	4714	548	100	5362	0
Total	**47548**	**1531**	**364**	**49443**	**38003**	**993**	**711**	**39707**	**7991**

Annexure 25 [Para 2.3.3]
Statement showing details of defective Links (Report No.962)

Zonal Railways	Train with broken rake links	Train with invalid links	Train with no rake links	Train having multiple links	Date on which test checked
NR	17	6	0	0	23 March 2016
	19	7	2	2	08 April 2016
NCR	10	3	0	0	12 April 2016
CR	4	4	1	0	11 April 2016
WCR	1	0	0	2	09 June 2016
SCR	1	3	0	0	06 May 2016
	2	4	11	0	13 May 2016
NER	19	10	2	0	
SWR	10	07	17	02	02 May 2016
ER	10	0	0	28	01 June 2016
	13	3	0	28	16 June 2016
NFR	7	6	1	2	21 July 2016
	85	**44**	**34**	**36**	

Annexure 27 (a) [Para 2.3.4.2]
Statement showing details of POH overdue Coaches

Zonal Railway	No. of Coaches due for POH	Date of Report	Remarks
NR	2365	23.03.2016	
SCR	2561	06.01.2016	PCV
	352	06.01.2016	OCV
ECoR	837	01.08.2016	
CR	3249	19.05.2016	
ER	889	21.06.2016	
WCR	382	09.06.2016	
SECR	657	14.06.2016	PCV-547, OCV-110
NER	795	23.06.2016	
SWR	3078	15.06.2016	PCV-2716. OCV-362
NFR	617	21.07.2016	PCV-508, OCV-109
Total	**15782**		

Annexure 27 (b) [Para2.3.4.2]
Statement showing discrepancies noticed in POH data

Zonal Railway	Audit observations
NR	At AnandVihar, Delhi Main, Amritsar, Sarai Rohilla, Jagadhri, differences in the range of 1 day to 1 year in the POH due and done dates were noticed between manual and ICMS (digital) records in respect of POH due/done dates.
NWR	Over NWR, at Ajmer workshop differences in POH date, Place of POH and Built year of Coaches were noticed in ICMS data. At Ajmer Workshop, physically more Coaches were received in the workshop for POH than those captured in ICMS which proved that ICMS data was not reliable.
NFR	Over NFR at NBQ workshop, out of 182 records of POH pertaining to 1st June, 2015 to 30th September, 2015, in 163 records were found mismatched.
CR	11 instances of mismatch of last POH done dates pertaining to August and September 2015 were noticed on comparing ICMS data with the records of Matunga location.
SWR	In SWR, lot of POH records were found in manual registers but as per ICMS records, POH details of only 18 Coaches were available. Details of MYS Workshop were not captured at all
NER	Details of coaches POH during August 2015 and September 2015 were tallied with POH done dates at Gorakhpur workshop and a difference of 1 day to over 4 months was noticed in 170 coaches whose POH was done.

Annexure 28 [Para 2.3.4.3]
Statement showing usage of POH overdue coaches in Train Consist

Zonal Railway	Coaches overdue and part of train	Audit observations
NR	744	POH of 288 coaches was due since May 2012 to December 2014
NCR	306	POH of 79 coaches was due since October 2011 to December 2014.
ER	2318	POH of 628 coaches was due since May 2012 to December 2014.
NFR	547	POH of 175 coaches was due since January 2012 to December 2014
NWR	844	POH of 243 coaches was due prior to 2013
WCR	92	POH of 36 coaches was due since Nov. 2013 to December 2014
SCR	454	POH of these coaches was due since May 2012 to June 2015
SWR	1910	POH of these coaches was due since January 2012 to December 2014
SECR	212	POH of these coaches was due for more than 9 months
ECR	165	Last POH done date was more than 24 months
WR	114	These coaches are overdue for POH as Coach Master table but these coaches are available in Train consist
Total	**7706**	

Annexure 29 (a) [Para 2.3.4.4]
Statement of Coaches marked as Sick but not marked (reported) as Fit

Zonal Railway	Coaches marked as sick but not released as fit	Marked sick during
CR	266	October 2008 to September 2014
ECoR	54	January 2010 to September 2014
ECR	142	February 2009 to September 2014
ER	292	January 2010 to August 2014
NCR	84	January 2010 to September 2013
NER	196	September 2008 to September 2014
NFR	323	December 2008 to September 2014
NR	503	September 2008 to September 2014
NWR	150	October 2008 to September 2014
SCR	98	September 2008 to September 2014
SECR	12	January 2010 to January 2014
SER	99	August 2009 to September 2014
SR	283	April 2009 to September 2014
SWR	55	October 2010 to September 2014
WCR	20	January 2010 to June 2014
WR	311	December 2008 to September 2014
Total	**2888**	

Annexure 29 (b) [Para 2.3.4.4]
Statement showing Coaches Reported Sick with a Delay of 30 minutes or more
(Cases Marked Sick w.e.f. 01 October 2013 to 7 October 2015)

Zonal Railway	Total cases Reported Sick	No. of cases reported after 30 or more minutes	Time period and difference between marking and reporting of coaches as sick
NR	12318	3311	30 Minutes to 53437 minutes
NCR	1671	339	30 minutes to 2564 minutes
ER	15612	8326	30 minutes to 2977 minutes
NWR	10569	4904	30 minutes to 4407 minutes
WCR	3255	626	30 minutes to 239 minutes
SCR	10237	4282	30 minutes to 981 minutes
SWR	5929	2955	30 minutes to 3049 minutes
ECR	14069	5255	30 minutes to 2954 minutes
CR	5739	2922	30 minutes to 11523 minutes
SECR	4034	1447	30 minutes to 364 minutes
NER	4619	2283	30 minutes to 419 minutes
WR	22051	8112	30 minutes to 21812 minutes
Total	**110103**	**44762**	

Annexure 29 (c) [Para 2.3.4.4]
Statement showing details of Coaches reported as Fit
but their Fit Marking Dates were not recorded

Zonal Railway	No. of cases where Fit Marking Reported dates were available but Fit Marking dates were not available
NR	7129
ER	1242
WCR	109
SCR	246
SWR	81
SECR	93
ECR	1091
CR	473
NFR	1693
Total	**12157**

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Annexure 29 (d) [Para 2.3.4.4]
Statement showing details of Coaches Reported Fit after delay of 30 or more min
(Coaches marked sick between 1 October 2013 and 7 October 2015)

Zonal Railway	No. of Coaches Marked and Reported Fit	No. of Coaches Reported fit After a Delay of 30 Minutes and More	Remarks/Reported Fit After
NR	12054	7127	30 Minutes to 365 minutes (but one case after 525610 Minutes)
ER	14880	11471	30 Minutes to 542 Minutes
SECR	3979	2400	30 Minutes to 350 Minutes
SWR	5721	4066	30 Minutes to 392 Minutes
NER	4332	3587	30 minutes to 405 minutes
WR	21336	12589	30 minute to 435 minutes
NFR	17339	13947	30 minutes to 719 minutes
Total	**79641**	**55187**	

Annexure 30 (a) [Para 3.1.1]
Statement showing non reporting of PRS consists to PRS Charting Section

Zonal Railway	Test Check Date	Location	No. of trains			Consists not reported
			Consists reported to PRS			
			Scheduled	>=4 hrs	<4 hrs	
1	2	3	4	5	6	7
CR	30/03/2016	All DNs	135	55	64	16
ECR	04-01-2016	All DNs	91	38	47	6
ER	30&31/03/2016	NKG	149	0	0	149
NFR	01-07-2016	All DNs	55	0	6	49
NWR	30/03/2016	Jaipur	19	1	9	9
SCR	30.03.2016	All DNs	136	58	61	17
WCR	30/03/2016	All DNs	107	8	12	87
Total			**692**	**160**	**199**	**333**

Source: COIS/ZN/CR501

Annexure 30 (b) [Para 3.1.1]
Statement showing deficiencies in ICMS – PRS Integration

Zonal Railway	Audit observations
NR	At Ambala, Jammu and Amritsar stations, the practice of sending details of train consist to PRS charting section through manually prepared memo/telephone was followed.
	Over NR, AnandVihar, New Delhi and Delhi Sarai Rohilla stations were unable to send train consist of a few trains for PRS charting and ICMS system indicated error message while sending consists. Late running of train was also one of the reasons for not sending train consist to PRS four hours before scheduled departure of the train.
	At Ambala, Jammu and Amritsar stations, PRS charting sections were not using the facility of getting train consist from ICMS and PRS charting officials at Ambala station were not aware of the operations of this facility.
	On 30 March 2016, it was noticed at PRS location (Charting Section) at IRCA Building, New Delhi that out of 139 trains, PRS consist of 117 train was reported to PRS Charting cell. PRS consist of all the trains were not reported before preparation of chart i.e. four hours before the schedule departure time of the train, which did not serve the purpose of sending consist to PRS.
	As per ICMS Report Number 501 of NR zone, during 1 January 2016 to 31 March 2016, data of 3616 train consist of was reported to PRS within four hours, train consist data of 4159 trains was reported on or after four hours and consist data of 4432 trains was not reported to PRS.
CR	ICMS web page was reviewed for the months of July, August and September 2015. The percentage of Train consist details sent to PRS less than four hours of train departure was 49% and that of not reported to PRS was 20.50 %. The usage of Train Consist details sent from ICMS to PRS in these cases were remote as these were not made available to PRS before preparation of chart i.e. four hour prior to departure of train.
SR	In respect of trains 11013/11014 (Kurla Express) and 12676 (Kovai Express) as only 50 minutes (less than 1 hour) were left between train arrival and departure, consists for these trains could not be sent to PRS four hours prior to chart preparation.
WCR	The practice of sending details of train consist to PRS charting section through manually prepared memo/telephone was followed.
CR, ECR, ER, NFR, NWR, SCR, WCR	Test check of ICMS Report No. 501 showing non reporting of PRS consist to PRS charting section for one day was reviewed over seven Zonal Railways and it was noticed that out of total 692 scheduled trains, train consist was not sent to PRS charting section for 160 (23.12%) trains prior to 4 hours and in respect of 333 (48.12%) trains, the train consist was not reported to PRS charting section. **(Refer Annexure 30 (a))**

Annexure 31

[Reference Para No. 3.4.1]

Statement showing null/zero records out of total 71447 records in Coach Master Table

S. no	Zonal Railways	NR	CR	ECoR	ECR	ER	NCR	NEFR	NER	NWR	SCR	SECR	SER	SR	SWR	WCR	WR	KR	IR	Total
1	CoachMaxSpeed	44	0	46	178	0	0	150	75	770	0	154	1	24	1	40	294	0	129	**1906**
2	Induction Date	106	70	110	384	21	130	210	194	1659	96	154	82	75	66	78	444	8	92	**3979**
3	Coach Base Depot	59	70	122	452	21	171	532	459	1781	120	160	96	76	66	112	233	9	149	**4688**
4	Coach POH Month	138	-	34	265	-	10	129	107	987	1	154	2	24	1	43	305	-	121	**2321**
5	Coach POH Due Year	96	5	35	265	-	9	106	95	967	1	154	1	24	1	42	302	-	107	**2210**
6	CoachBuiltYear	49	0	50	201	-	0	414	203	880	-	154	2	24	1	9	379	-	79	**2445**
7	CoachBuiltMonth	179	0	54	329	-	1	470	768	0	1	154	2	26	1	41	569	-	135	**2730**
8	Coach Factory	2	0	35	235	1	9	463	266	266	1	154	3	31	1	46	535	-	134	**2182**
9	Coach Workshop	158	70	121	494	21	170	522	196	4	119	160	96	75	66	107	597	9	148	**3133**
10	Coach Status	6735	6998	2003	3182	4623	1288	3433	3345	2902	4119	1490	2800	7068	2342	1215	5505	80	141	**59269**
11	CoachCondemnation Date	6760	5254	2149	3498	4972	1614	3422	2037	2845	4346	1481	2801	5423	3006	1267	5953	135	149	**57112**
12	Coach Owning Division	59	70	122	452	21	131	528	468	3	96	154	82	78	66	113	174	8	149	**2774**
13	Coach Fitness Type	3	3	31	218	2	6	476	502	0	7	-	7	17	1	40	510	-	134	**1957**
15	Added in Master Table	4556	3699	1775	3121	3043	933	2251	2484	2118	2955	804	2369	4243	2265	802	4672	145	78	**42313**
16	Added by UserID	4596	3722	1788	3143	3108	963	2294	2487	2152	3023	804	2396	4290	2302	879	4829	145	114	**43035**
17	Census Flag	2687	2892	713	852	3146	546	862	713	656	2095	574	1098	2983	907	463	2676	45	15	**23923**

Source:MT_Coach_Master table

Annexure 32 [Para 3.5.2]
Statement showing details of detention data not captured

Zonal Railway	Detention Sub-Codes/Sub-Reasons Not captured	Remarks Column Blank
CR	14	61
ECoR	30	9
ECR	4	95
ER	10	86
NCR	54	56
NER	7	47
NFR	10	19
NR	26	66
NWR	4	12
SCR	12	13
SECR	10	4
SER	22	32
SR	46	11
SWR	12	14
WCR	17	31
WR	18	34
Total	**296**	**590**

Annexure 33 [Para 3.8]
Statement showing non-updation of various charges in ICMS

Zonal Railway	Audit observations		
NCR ECR	The charges viz. Repair & Maintenance and Depreciation charges for locos were not updated in the report No.1521 of ICMS as charges should have been as per Railway Board's letter No, F (C) /2003/27/1 dated 30-04-2015 as detailed below.		
	Particulars of charges	*Rates shown in RB letter*	*Rates shown in ICMS report*
	Repair & Maintenance (BG Electrical)	1059.27	484.85
	Depreciation (BG Electrical)	348.72	237.02
	Repair & Maintenance (MG Diesel)	484.85	1059.27
	Depreciation (MG Diesel)	237.02	348.72
NR	Over NR, the hire charges for coaching vehicle i.e. Running & Workshop Repair and Depreciation charges were not found to be updated in the ICMS Report number 808 as per Railway Board's letter No, F (C) /2003/27/1 dated 21-04-2016 and the same were being computed manually.		

Annexure 34 [Para 3.9]
Statement showing Helpdesk Complaints/Grievances pending redressal

S. no	Zonal Railway/ User	No. of complaints (As on 7 October 2015)	No. of complaints more than six to 12 months old
1	CR	1	1
2	CR	42	26
3	ECOR	24	8
4	ECR	36	13
5	ER	17	4
6	KR	4	3
7	MT	2	2
8	NCR	16	7
9	NER	31	13
10	NFR	34	21
11	NR	46	20
12	NWR	43	16
13	RB	1	1
14	SCR	23	15
15	SECR	44	21
16	SER	14	9
17	SR	51	32
18	SWR	19	15
19	WCR	19	5
20	WR	38	24
	Total	**505**	**256**

CF=ICF, MT=RB, RB=Railway Board, KR = Konkan Railway