EXECUTIVE SUMMARY

1. Crew Management System in Indian Railways

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

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

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

The major audit findings are as under:

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

[Para 2.1.1 to 2.1.8]

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

[Para 2.1.9 to 2.1.14]

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

[Para 2.2.1, 2.3.1 & 2.3.2]

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

[Para 2.4.1 to 2.4.3, 2.4.6]

V. The grading of crew and their counselling was not done as per prescribed periodicity. Data of grading and counselling was not properly maintained as mismatch was noticed between the CMS data and manual records which was not assisting management in the monitoring and deployment of crew.

[Para 2.4.7 to 2.4.8]

VI. The most crucial security measures/devices like Biometric and Integrated Breath Analyser (BA) to validate crew authenticity and competency were not implemented all over IR. Biometric system was introduced over six ZRs and integrated BA system was introduced over four ZRs only.

[Para 2.4.10, 5.1]

VII. Improper configuration of the CMS led to wrong computation of mileage allowance of 21136799 kms. Weak application controls led to charging of mileage allowance even for zero duty hours, mileage allowance was paid even when the crew was absent.

[Para 2.5.1 to 2.5.4]

VIII. Weak application controls deprived the Railway Administration of effective deployment of crew as CMS allowed incorrect capturing of Traffic Advice (TA), train details and booking of crew against such incorrect TAs. Improper reasons were allowed to be captured for TA cancellation, change in sign on/sign off time. Reports pertaining to periodical rest, training, breach of rest, Lobby utilization contained inconsistent/wrong details**.** The Abnormality Module and Coaching Link Module were not actively in use.

[Para 3.1 to 3.12]

IX. Preventive and detective measures to ensure physical security of resources were not found adequate. Passwords in use did not prevent unauthorized access to the system. CMS user management was found to be weak. Anti-virus patches were not timely updated. Business Continuity Plan (BCP)/Disaster Recovery Plan (DRP) was implemented at local site and was yet to be implemented at remote site/lobby level for ensuring 24x7 CMS operations. Remote site data backup was not maintained. Privileges assigned to users were not commensurate with their job specifications.

[Para 4.1 to 4.7]

X. Proper roadmap could not be drawn for the complete rollout of CMS**.** Locations were selected/priorities were fixed without considering the feasibility aspect. Poor monitoring of development and implementation of the project resulted in delayed implementation of the project. CMS was not in use by guards/crew at a number of lobbies. Trained personnel were not operating CMS at lobbies of different zones. Lobbies were not integrated as per RB directives. Annual Maintenance Contract at majority of the lobbies was not in place. Custodian of

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

[**Para 5.1 to 5.8**]

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

[Para 5.1]

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

[Para 6.1 to 6.3]

2. Recommendations

I. ***The Master tables in the CMS database need to be standardized. Necessary validation controls on important fields may be introduced for ensuring completeness and accuracy of data input. It will enhance the user's reliability and dependency on CMS and enable the users to dispense with the system of parallel maintenance of manual records.***

II. ***Effective integration of CMS with Pay Roll Application, Control office Application, FOIS and ICMS should be expedited so that needs of the users may be served.***

III. ***Grading and counselling of crew should be ensured at prescribed periodicity by completely and accurately updating the relevant database.***

IV. ***Implementation of biometrics and integrated BA devices should be expedited at all lobbies to ensure crew validation at the time of sign on/off and that crew remains sober while operating the train respectively.***

V. ***Adequate checks/validation controls should be introduced for data validation. Controls such as dropdown menu/list box etc. may be considered for validating data.***

VI. ***Adequate controls may be introduced and CMS may be configured as per extant orders/authority to prevent excess payment of allowances.***

VII. ***IT Security Policy including backup and password policy should be strictly implemented. Implementation of BCP/DRP at remote site/lobbies should be expedited to ensure uninterrupted operations. Physical security at lobbies may be strengthened. Software patches/updates may be timely and regularly installed.***

VIII. ***The Change Management Procedure should be devised. Formal training mechanism to educate CMS operators about new features of CMS may be ensured and complete/updated CMS documentation should be made available to all concerned.***

IX. ***Dedicated staff for CMS operations should be provided. In case outsourced staff is deployed for CMS activities then there should be approved policy for outsourcing, specifying the individual responsibilities of railway users vis-à-vis outsourced users.***