| CHAPTER 3 |
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## *Metro Railway, Kolkata:    Transaction Accounting System*

The Financial Management Information System package, originally developed by South Central Railway, was implemented in Metro Railway, Kolkata in 1989 after customisation in house as per Railway Board's order. The main objective of the system was to furnish the relevant financial information viz., Monthly Account Current, Daily Cash Book etc., as and when required. Initially, original data was collected from different sections and fed manually into the system by data entry operators at Electronic Data Processing center. Subsequently, in order to dispense with the manual system, Metro Railway, Kolkata introduced (October 2001) the Transaction Accounting System (TAS) package in Accounts department at a cost of Rs.0.89 crore and integrated it with Financial Management Information System. The application was developed on SCO-UNIXWARE platform with Oracle 8i as Relational Database Management System (RDBMS) and Developer 2000 (D2K) as front end.  The entire system is connected through a Local Area Network.

An IT audit of the above application including analysis of data for the period from December 2003 to May 2004 through IDEA[11], a Computer Assisted Audit Technique (CAAT), was conducted during January 2004 to August 2004. Audit observed deficiencies in the general and application controls as follows.

∗       The Regional Computer Centre, Kolkata was asked by Metro Railway Administration, Kolkata to conduct a pre-investment study for implementation of computerised TAS.  The Regional Computer Centre in its report (July 1999) suggested two options viz; clustered solution and non-cluster RAID[12] solution but recommended the cluster solution. The Metro Railway, Kolkata awarded the work to an outside agency on cluster basis but later implemented the application in non-cluster environment as the outside agency failed to implement the application in a cluster environment citing certain constraints regarding incompatibility with Oracle 8i and SCO-UNIXWARE.  As a result, in May 2003 when the main server crashed, the entire system was brought to a standstill for 12 days, which adversely affected the on-line processing of major applications such as salary bills etc.

∗       The outside agency, which developed TAS, had access to both the programme as well as the database, which was clearly in contravention of the accepted principle of segregation of duties. This arrangement allowed the outside agency personnel to potentially make changes in the database as well as in the audit trails, which make any changes untraceable.  Since TAS was not being run in trial mode but was operational on real time basis and handling financial transactions, the

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[11] **Interactive Data Extraction and Analysis.**
[12] **Redundant Arrays of Inexpensive Disks**

posts of System Administrator and Data Base Administrator should have been created to manage the system. Moreover, it was seen that access privileges were defined only at the level of different layers and not for each user. As a result all similar users such as Section Officers could access the respective sectional module and were allowed to modify/delete the data relating to other users.

∗ Audit also observed deficient application controls as in the budget module where, in the absence of incorporation of proper validation, the system accepted any value entered as amount of a bill without cross verifying the availability of funds under the respective head. Test check by audit revealed that Rs.1.59 crore were incurred in excess over the budget allotment under three different heads[13]. Further, sample study of six allocation heads revealed that the figures of budget allotment and availability of funds were reflected either as NIL or were incorrect. In case of one particular head[14] the availability of funds reflected in TAS was incorrectly exhibited as Rs.5.87 crore instead of the actual figure of Rs.2.16 crore. Thus, there was always a possibility of booking excess expenditure through TAS.

∗ Another application control deficiency was observed in the CO6/ CO7 modules[15]. In railway accounting system the amount shown against the bills passed (CO7 No.) for payment can never be more than the total amount of the same bills due for passing (CO6 No.). However, test check of TAS generated report on a particular date revealed that the amount booked against six CO7 numbers for passing twelve bills exceeded the total amount of those twelve bills in the CO6 module by Rs.1.43 crore. In another case, it was noticed that identical CO7 No. were assigned to two different set of bills passed on different dates which was in contravention to the codal provisions. The error was rectified manually and incorporated in the system by the outside agency without any documentation.

∗ Similarly, the check master module at times generates different cheques with same cheque numbers. For example cheque No. 107833 was generated on 20 January 2004 and again on 29 January 2004. This problem arose as the application was designed to check uniqueness of a cheque by a combination of two parameters viz. cheque number and date. As a result it was possible to generate different cheques with the same cheque number, provided that the cheques were generated on different dates. The fact was accepted by the Metro Railway Administration Kolkata who agreed to incorporate suitable changes. However, it was observed that the application has not been corrected (March 2005).

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[13] **Operating (Fuel) expenses, Staff Welfare Amenities, Stores Suspense (under grant 16).**
[14] **Head of allocation 0865131.**
[15] **CO6 and CO7- module numbers allotted for bills passed and bills due for passing**

∗    It was observed that the Provident Fund module was also deficient as seen from a case in August 2003, where the amount admissible to a particular staff was shown short by Rs.0.10 crore in TAS due to incorrect field size in the report program. Though Metro Railway Administration agreed to rectify the deficiency, this example showed that data integrity was not absolutely assured in the module.

∗    The terms and conditions for final/ temporary withdrawals from Provident Fund should always be in conformity with the codal provisions i.e., amount of withdrawal should not exceed the admissible limit and the purpose and other conditions for withdrawal should be as per codal provisions.  Test check revealed that TAS is unable to generate the current balance of the subscriber at the time of passing Provident Fund withdrawal bills. Moreover, it was observed that TAS accepts any amount entered into it for Provident Fund withdrawal without validating the eligibility under the rules.  As a result, all of the above checks continue to be exercised manually by the section concerned.

Thus TAS, which was developed by spending Rs.0.89 crore was found deficient both in application and general controls and needs to be improved upon substantially in order to ensure data integrity and to make the system reliable.