

Journey of Accrual Accounting over Indian Railways



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This article traces the preparatory stages and pilot rollout of the Accrual Accounting Project over Indian Railways (IR), flagging the challenges faced and the measures taken to secure its success. The project was initially implemented through the Grafting Method, with Financial Statements generated for four financial years (2017-18 to 2020-21) within a short span of 21 months, from September 2021 and May 2023.

Simultaneously, in 2022-23, the phased implementation of the pilot project through the Transaction Method was successfully carried out across the entire IR with above 99% accuracy. As a result, both methods are now running in parallel to the cash-based accounting system on IR from April 1, 2023. Accrual Accounting, as part of accounting reforms, has been implemented on Indian Railways by the Accounting Reforms team, headed by the Chief Administrative Officer, with support from CRIS and ICAI ARF.¹

Introduction

Accrual accounting in the government sector has been adopted by well over a hundred countries, leading to marked improvements in public finance management. Beginning with its first adoption by New Zealand in 1992 followed by Australia in 1999-2000, it has gained momentum globally, including in international organizations such

as the Commonwealth, European Commission, OECD, and the United Nations, especially after the issue of International Public Sector Accounting Standards (IPSAS). In India, the Twelfth Finance Commission recommended the adoption of accrual accounting for the Union and State Governments, following which the Government Accounting Standards Advisory Board (GASAB)² was established in the office of the Comptroller and Auditor General (CAG) of

¹ To undertake research in the areas of Accounting, Auditing, Capital Markets, Fiscal and Monetary Policies and other related disciplines, ICAI established ICAI Accounting Research Foundation (ICAI ARF), a non-profit company as a core research body in January 1999. The Institute of Chartered Accountants of India (ICAI) is set up under The Chartered Accountants Act, 1949, an Act of the Parliament. ICAI is the second largest accounting body of Chartered Accountants in the world, with a strong tradition of service to the Indian economy in public interest.

² GASAB members include the Heads of all Central Government Accounting Services and representatives of ICAI, Ministry of Finance, Director General of NCAER and RBI.

India³, through a notification dated 12th August 2002, to establish and improve standards of governmental accounting and financial reporting, thereby enhancing accountability mechanisms.

Although the CAG has not yet mandated the use of accrual accounting principles, observing its success globally, Indian Railways has voluntarily decided to implement accrual accounting, in addition to its existing cash-based accounting system⁴.

Initiation of Accrual Accounting in Indian Railways

The Accounting Reforms Project for Indian Railways was sanctioned⁵ in 2003-04 *“To transform the Indian Railways into a customer-oriented organization, it is proposed to improve its accounting system..... to generate costing data on passenger and freight services on commercial lines”*⁶.

The Vision of Accounting Reforms in Indian Railways was *“To act as an engine of self-sustainable growth by providing timely, high quality and meaningful financial information to various stakeholders through right accounting, right costing and right outcomes through right pricing”*⁷.

The project took off with the appointment of consultants to study the existing Accounting System and recommend a state-of-the-art Accounting System, along with an improved cost accounting system. The terms of reference included a compilation of Government accounts as per the accounting standards stipulated by the GASAB, and in conformity to Accrual-based Accounting as per Generally Accepted Accounting Principles (GAAP) in segmental accounting mode. This involved accounting separation for each Line of Business (LOB), such as Passenger, Freight, Suburban, and Fixed Infrastructure, and with further sub-classification into Lines of Service (LOS) for profit center accounting. Since costing methods required a major

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revamping, the consultants were also asked to develop costing of train operations on a train-wise, section-wise, route-wise basis, as well as conducting related profitability analysis using Activity-Based Unit Costing for better cost analysis and cost control management.

In December 2014, the ICAI Accounting Research Foundation (ICAI ARF) was engaged by the Railway Board

to validate the Consultant's Report and conduct a Pilot Study for the introduction of Accrual Accounting⁸ with the aim of preparing Accrual-Based Financial Statements (ABFS). ICAI ARF stationed its team for five months at Jaipur North Western Railway (NWR) headquarters, to compile the information received from divisions, workshops, and headquarters. The targeted deliverables included the identification of accrual impacts such as receivables, payables, advance income, etc, and the preparation of a Comprehensive Scope Evaluation Report (CSER), detailing AS-IS, TO-BE, way forward methodology for the preparation of financial statements. Other deliverables included the preparation of a Fixed Asset Register for the year ending, opening and closing balance sheets, and an Accrual Accounting Implementation Manual, etc.

The pilot project at NWR was concluded in October 2016 with the preparation of the following documents⁹:

- a) Accrual-based financial statements for NWR for the year ending 31st March 2015, including the opening balance sheet starting 1st April 2014, closing balance sheet as of 31st March 2015, Profit & Loss Account for the year 2014-15 and Cash Flow Statement for 2014-15;
- b) Notes to Accounts and Disclosures;
- c) Significant Accounting Policies for Accrual Based Financial Statements of NWR;
- d) Accrual accounting implementation manual for rollout across Railways and Production Units.

³ Article 150 of the Indian Constitution provides that the Hon'ble President of India should prescribe the form of accounts to Union and States on the advice of the C&AG. The form of Account keeping is mandated by CGA and w of India (Rule 74 GFR).

⁴ providing financial statements to Parliament in accordance with existing rules is compulsory

⁵ for Rs 19.11 cr, enhanced to Rs 57.58cr in 2016-17. In 2006-07 the AIMS project was sanctioned for Rs 55cr, enhanced to Rs 96.04 cr in 2016-17. Under the AIMS Project, MOU for development of IT applications for AR was signed with CRIS in 2017 for Rs.48.00cr. (Development of Application software and implementation for Accrual accounting, Performance costing, and Outcome budgeting).

⁶ Minister of Railway's Budget speech 2003-04

⁷ Executive Summary of Accounting Reforms in Indian Railways

⁸ initiated in Ajmer division of North Western Railway (NWR) in 2015, shifted to NWR Head Quarter and also started in Rail Coach Factory (RCF) in 2016 as non-availability of rolling stock holding and apportioned earning at Division level made the study incomplete.

⁹ released by the Finance Minister and the Railway Minister in a National Conference on "Accounting Reforms in Indian Railways – A Strategic Mission for Sustainable Growth", held in New Delhi in December 2016



The NWR pilot led to the creation of not only the pilot financial statements for a railway zone but also holistic manuals and guidelines for accrual accounting. An expert committee framed the methodology particularly for assets whose historical cost was not available. For knowledge sharing and capacity building, training was organized across Indian Railways. Training Modules and Accrual Accounting Implementation Manual were developed and circulated across Indian Railways. The deliverable of the project also included preparation of concept paper on mapping of Finance Code II to facilitate transaction-based accrual accounting and engagement with CRIS to get the same implemented through an extended IT application.

Although the Accounting Reform in Indian Railways was initiated in 2003-04, it gained momentum with the announcement of implementation of the AR project on mission mode in the Railway Budget speech of 2016:

“Mission beyond book keeping: This is a structural change which forms the bedrock of our transformation, as right accounting would determine right costing and hence right pricing and right outcomes. We intend taking

up its implementation over Railways in a mission mode and complete the entire roll out in next few years.”

This was followed by the establishment of a dedicated project organization¹⁰ with the goal of preparing the Indian Railways’s opening balance sheet as of 1st April 2015 and Accrual-based financial statements for the FY 2015-16 & 2016-17 by March 2019¹¹. These were to be a set of accounts in addition to the cash-based existing financial statements which are prepared as part of Appropriation Accounts of IR. The Railway Board approved ICAI ARF as professional consultant for the Project.

The budget announcement identified three broad functional areas of Accounting Reforms:

1. Accrual Accounting
2. Performance Costing
3. Outcome Budget.

The purpose being right accounting to determine right costing and hence right pricing and right outcomes¹². A robust IT system is the backbone of the Accounting Reforms and the work has been assigned to the Ministry of Railway’s IT arm - the Centre for Railway Reservation System (CRIS).¹³

Accrual-Based Financial Statements (ABFS) at Indian Railway and Zonal levels

Successful generation of ABFS at NWR in December 2016 became its precursor for all Zonal levels and Indian Railway levels through the same grafting methodology as followed in NWR and RCF, using existing data available in Account Current and RAR, supplemented by accrual impact data like FAR, liabilities and other assets not captured in the existing system in formats devised by ICAI ARF. The project¹⁴ was declared to be of national importance and monitored at the PMO level. ICAI ARF deputed 25 Teams consisting of more than 130 Chartered Accountants across IR. In February 2019 IR’s first historical Accrual-Based Balance Sheet for 2015-16 and 2016-17 was prepared, within

¹⁰ Advisor (Accounting Reforms) as the Mission Director assisted by one Director level officer at Railway Board (Ministry) and a Chief Project Manager (CPM) Accounting Reforms, Northern Railway (Field Head Quarter level). To augment this organization in the field, Accounting Reforms cells at all Railway zones and Production Units were also created. The present setup has the Chief Administrative Officer/ Accounting Reforms (CAO/AR) as the nodal authority over IR

¹¹ for entire Indian Railways, comprising accounting Units of 16 Zonal Railways (68 Divisions and 42 Workshops), Kolkata Metro, 8 Production Units and other offices like CORE, COFMOW, RDSO etc.

¹² Budget speech of Hon’ble Minister for Railways, February, 2016-17

¹³ Centre for Railway Information System (CRIS) has been entrusted with the work of developing the integrated IT based system for all 3 modules of Accounting Reforms. This IT system would interface with the existing applications (such as PRS, FOIS, IPAS etc.) and would provide smooth, secure and seamless integration for MIS reporting. Having earlier developed the computerized cash-based financial management system - Integrated Payroll and Accounting System (IPAS), CRIS has advantage of familiarity with existing system while integrating data captured to produce cash-based accounts with that required for accrual accounting accounts.

¹⁴ Contract Agreement between ICAI-ARF and Railways for Roll Out of Accrual Accounting in all Zonal Railway & PU over Indian Railways and preparation of Accrual Based Financial Statements (ABFS) up to 2016-17 was signed in Feb.2017 at a total cost of Rs 9.88 crs

the target set by Hon'ble Finance Minister¹⁵ under "Mission Beyond Book-Keeping". Based on national, international practices, this was the first accrual-based balance sheet of a Ministry in Gol. While computing the assets and liabilities of IR the study identified more than 70 lakh Fixed Assets items classified into 18 classes, with 14 lakh assets taken at a nominal value of Re. 1¹⁶. It also brought out the value of Capital Works in Progress (CWIP) at ₹1.11 crore and the actuarial valuation of employee retirement benefits at Rs. 8 lakh crore, though it was not included in Financial Statements.

ABFS preparation for FY 2015-16 and 2016-17 was done by ICAI ARF using its own resources. However, for ABFS of 2017-18¹⁷, the Railway Board decided to set up indigenous capabilities for capturing and processing data, with the Accounting Reforms Team headed by the Chief Administrative Officer, under the Railway Board, in charge of the work with the handholding and assistance of ICAI ARF¹⁸.

In December 2018, the Railway Board directed the preparation of ABFS at each individual Zonal Railway and Production Unit level. ARMS utility for generation of Financial Statements was developed by CRIS in May 2021 and tested on four zonal railways from August to December 2021. With support from the Accounting Reforms, CRIS and ICAI-ARF Teams, each Zonal Railway and Production Unit generated their Trial Balance for 2017-18 by February 2022 and their Balance Sheet by April 2022, followed by those of 2017-18, 2018-19, 2019-20, 2020-21 by May 2022, June 2022 and November 2022 respectively. Thus, between January 2022 and November 2022, four years' ABFS for each Zonal Railway and Production Unit were prepared by Grafting Method.

Grafting method uses the existing data in Account Current and RAR, supplemented by accrual impact data from accounting units like FAR, other assets and liabilities(not captured in existing system) for which formats have been devised by ICAI-ARF



Accrual Accounting Implementation by Transaction Method:

While the Grafting method is a good start to adopt accrual accounting, for migrating to accrual accounting on a sustained basis and moving to a Performance Costing System, requisite details need to be captured at the transaction level itself. For this 10-digit allocation code¹⁹ were developed parallel to the existing 8-digit code, with the last two digits segregating each transaction into Expenses, revenue, assets, and liabilities. Simultaneously, mapping of more than ₹3.40 lakh allocations of all revenue, capital and suspense heads was completed by April '22²⁰ to enable seamless data flow from IPAS²¹ into Accounting Reforms Management System (ARMS) for preparation of accounts in accrual mode and generation of accrual-based financial statements (ABFS) from the system captured data. Following the validation of mapping and development of prototype by CRIS and incorporation of new 10-digit code in IPAS in May '22, IPAS was integrated with ARMS in June '22, followed by a Trial run on 3 months' data (April-June '22) of Northern Railway.

Implementation of the Transaction based Accrual Accounting system started on 1st August 2022 from

¹⁵ Hon'ble Finance Minister Arun Jaitley in his Union Budget Speech 2017-18: "As part of accounting reforms, accrual based financial statements will be rolled out by March 2019."

¹⁶ Due to no records of their cost of acquisition their valuation could not be done

¹⁷ Accrual Accounting Financial Statements include: Balance Sheet, Profit and Loss Account, Cash Flow Statement, Significant Accounting Policies and Notes to Accounts

¹⁸ Work was awarded to ICAI-ARF through a contract agreement dated Aug 2020 for preparation of ABFS for 2017-18 and 2018-19 through Grafting method, extended for ABFS 2019-20 and 2020-21.

¹⁹ Classification of Accounts (COA) defines and records each class of transaction to depict financial health of an entity. It is the basis of current Cash Based Accounting and remains so in the Accrual Based System. For smooth transition to Accrual Basis, a new easy, user-friendly CoA architecture was created to define and record each class of transaction for a clear assessment of the financial health of an entity. The system was aligned to the current system and relies on back-end mapping with existing Allocation codes but does not disturb existing MIS generation. Purpose of a CoA under Accounting Reforms is twofold : To segregate transactions into Expenses., Revenue, Assets and Liabilities and to make accounting amenable to computerization.

²⁰ By January '22 mapping of Revenue Demands completed, in Feb '22 mapping of Suspense heads completed and in Apr '22 mapping of all Capital Demands completed.

²¹ Integrated Payroll and Accounting System

a few units and was proliferated²² over each Zonal Railway and Production Units by 31st December 2022 under close monitoring by the Accounting Reforms Team. The accuracy of transactional data flow from IPAS into ARMS was a high 97% in January '22 due to the painstaking precision in the backend mapping and comprehensive training to field units are given before initiation of the system at each hub²³ in the field by the combined teams of Accounting Reforms and ICAI-ARF.

From August '22 to December 22, the implementation of Accrual Accounting through the Transaction Method on all Zones and PUs was completed with the Test run of the flow of Transactional Data from IPAS into ARMS, followed by the successful testing of the CRIS-developed software for preparation of Trial Balance and Balance Sheet. With some dummy data for Opening Balance, a Balance Sheet could be prepared with the month's data to check the efficacy of the system. By the end of Financial Year 2022-2023, the seamless flow of data from IPAS to ARMS was at almost 97%, which increased to above 99% by May '23 with active solutions worked out for the problem issues. The system is now running live on the entire IR from 01.4.23 and by the end of the Financial Year will be able to generate all Accrual based Financial Statements. Improvements and value additions will continue.

Measures for successful project implementation²⁴:

Success in the project implementation is attributable to several factors, the first among which is political will and financial resources. Well-planned strategy and choice of partners viz CRIS and ICAI-ARF played a crucial role. The Joint Expert Group consisting of senior officials of the Indian Railways and professionals, was constituted in 2015 to address issues pertaining to accounting policies, valuation of assets, etc., and ensure that the Notes to Accounts and the Accounting Policies followed are consistent with the Generally Accepted Accounting Principles and Accounting Standards issued by ICAI laid sound foundations for the project to proceed.

Ultimately, the actual implementation of Accrual Accounting all over IR by both methods in a short time span for a huge ministry like Railways, with a Balance Sheet of approximately ₹9,00,000 crores (2019-20) with more than ₹70 lakhs assets could be possible due to



detailed fore planning, continuous hand-holding and close monitoring by the Indian Railway's Accounting Reforms Team headed by the Chief Administrative Officer, with robust support from its IT partner, CRIS, and the professional partner, ICAI-ARF. Field training by combined teams of AR and ICAI-ARF at several locations across IR for project awareness and capacity building played a vital role. Preparation and sharing of the User Manual and video instructions for step-by-step implementation before the start of the project was valuable in the timely onboarding of the field stakeholders. Seamless and round the clock interaction with each field unit by the central AR Team through specifically formed whatsapp groups at both, officers and staff levels, for direct and continuous access to the AR/CRIS/ICAI team was a constant support and confidence-building measure. The ARMS portal used to raise issues by field units and solutions given by the AR team served as an effective digital platform for virtual communication. Close unit-wise follow-up by the AR team of the results of accuracy percentage through 10-day Reports enabled the identification of units with unsatisfactory results for specific problem solving and guidance. Fortnightly review meetings of AR, ICAI, CRIS, and Railway Board officials to resolve teething problems, which ran into hundreds along with frequent

²² (a) 01.8.22- NR- UMB division, Jagadhri workshop; NER: IZN division, IZN workshop

(b) 01.9.22: MCF, DMW and NR and NER Construction HQ

(c) 01.10.22: NR HQ, all divisions, workshops and all construction units of NR; NER HQ, all divisions, workshops and all construction units of NER

(d) 01.11.22: 10 ZRs/PUs

(e) 01.12.22: 11 ZRs/PUs

²³ to facilitate field level trainings and implementation, hubs were set up in the field which catered to the zonal railways in its vicinity

²⁴ Since ABFS of 2015-16 and 2016-17 were prepared by ICAI-ARF through its own resources, ABFS of 2017-18 onwards upto 2020-21, that is for 4 years, was prepared for the first time with railway resources for all India by the Accounting Reforms Team. The actual implementation happened between September 2021 and March 2023.

review meetings and video conferences by CAO/AR team with field units, CRIS and ICAI continuously kept the project on the right track. The horizons were expanded by regular seminars and brainstorming sessions.

Challenges in the Project

Being the pioneer ministry in the government to implement the project, solutions had to be devised a new for the teething problems. Some critical inputs required for the implementation of the project were de novo development of Standards and Policies for the government sector, Chart of Accounts, staff training, skilled staff, expert support, IT Systems, finances, and political will and support. Fortunately, the AR project enjoyed the patronage of the Minister of Railways right from initiation. The cost was found to be a significant parameter in the project implementation, especially of the IT systems, contracting of the premier expert agency as professional partner (ICAI ARF), staff, and training. The challenge was met with adequate fund allotments timely by the Railway Ministry.

Data collection for the creation of the first Fixed Asset Register was a major challenge. Due to the non-availability of old records, the date and cost of the acquisition of many assets, including structures such as bridges and station buildings were not ascertainable. Building up the Fixed Asset Register under such circumstances was an onerous task, more so since the assets were not listed so far, and the written down cost of assets was not available due to yearly depreciation not being applied in the cash-based accounting. IR being more than 150 years old and spanning the length and breadth of the country has a huge number of assets, which were finally listed at more than 70 lakh. Records of land and demarcation of its ownership were not available in a large number of cases. The original cost of Track and Rolling Stock also was unascertainable in several cases, as also the segregation of the latter into owned and leased assets. Codal life for many assets such as roads/buildings/bridges/tunnels was not available for their lived life. No separate records of Capital Works in Progress (CWIP) were available. Data of inventory, investment, unpaid liabilities; advance earnings; and assets discarded/condemned was also not available. Most of the data available was in manual form. Not only data collection, but data validation was a big challenge. The threshold limit to write of assets had to be defined for each asset class. Accrual Impact Sheets had to be cast, as well as

the Actuarial calculation of Pension Liabilities. Training and capacity building for project implementation was a major challenge especially since the project was rolled out on the entire IR within a short span of a few months.

Conclusion

Accrual Accounting in Government brings marked qualitative improvements in account keeping, lending its value for analytical and managerial insights and enabling decision makers to identify implications of significant heads, which may not be accounted for in cash-based accounting, such as depreciation, dues payables, debt and its service cost etc. It brings worldwide uniformity and transparency in the accounting system with conformity to international standards of accounting, thereby inducing stakeholders' confidence. With the implementation of Accrual Accounting in Indian Railways, the complete accounts of the Ministry will be integrated, as its Public Sector Undertakings maintain accounts in the commercial accounting format, while the field units maintain it in cash-based government accounting format. Improvements in the accounting system of Indian Railways with building up of a robust and reliable balance sheet and other financial statements will reap rich dividends for IR by bringing down the cost of market borrowings for financing their capital budget, while accounts prepared directly from the transactions under the more precise and comprehensive formats of accrual accounting system will enable replacement of IR's age old costing system with an improved, incisive Performance Costing System. Accrual Accounting and Performance Costing mark major reforms in accounting system which are essential for strategic business decisions and identify profit and cost centres as also activities that can be shed or expanded as per their value and cost to the organisation. With Indian Railways increasingly being sensitive to its financial viability and accountability, these reforms assume prime importance for the organisation. Successful roll out of the Accrual Accounting Project over IR is therefore a critical milestone in its journey towards financial sustainability.



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