

TAN-BRIDGEMAN, THE BRIDGE MAINTENANCE MANAGEMENT SYSTEM FOR TANZANIA (BMMS)

ABSTRACT

In 1994, the Ministry of Works (MOW) Tanzania started an in-house development of a Bridge Maintenance Management System for effective scheduling bridge maintenance activities, timely and rational allocation of funds for the works, bridge capacity rating and bridge safety control.

The first version of Tan-Bridgeman was inaugurated in October 1997. To date there have been several versions that did not involve major upgrading but rather improvement of the user-friendliness and the current version was finalised in October 2002.

The computerised Tan-Bridgeman is a windows-based system. The current version of the system uses Windows NT operating system and ORACLE database.

The BMST computerized programme whose basic tool is use of codes, has been developed in order to ease the management of bridge data. Codes are given for data on identification, administrative, geometrical and structural aspects, damage types and causes, and maintenance activities. The main purpose is to give uniform defined terms, characteristics and expressions for the same types of data from one project to another and throughout the country.

The Tan-Bridgeman has four distinctive modules: for inventory that contains all physical information on the bridges, such as their type, size, location and how they were constructed, for **Inspection that** contains observed defects on bridges and indicates required maintenance and associated costs, for **Maintenance prioritisation** useful in planning and scheduling maintenance activities and recording executed works and for **Administration** for system set-up, co-coordinating different codes and managing users and user privileges. It also facilitates transfer of data between the regions and headquarters.

The BMS has four major Handbooks; for inventory, inspection, maintenance and for capacity rating. The system has also three guidelines/manuals: a user guide manual, for maintenance, for documentation and for handling common errors and problems.

Handbooks and Manuals are the important tools for disseminating the system's requirements in order to achieve uniformity and consistency of the management of bridges with regards to definitions, judgements and terms employed throughout the whole country. Well-prepared handbooks and manuals are the key for consistency and successful management of bridges and their importance lies in their ease for understanding by the staff using the system.

Tan-Bridgeman is now being employed by TANROADS in all the regional offices of Tanzania Mainland and update of the bridge conditions and inventory data are carried out annually.

A few challenges facing the system include in ad

quate funds for regular collection of bridge condition data and updating of bridge inventory data as well as frequent staff training programmes.

Further improvement of the system together with incorporating other functions in order to alleviate its range of services is of utmost importance.