

## TRANSPORT DEPARTMENT

### 6.4 Vehicle Registration System

#### *Highlights*

Lack of a time frame for implementation of the project resulted in computerisation taking over five years for completion.

(Paragraphs 6.4.7.1)

There were 346 sets of duplicate engine numbers involving 784 vehicles and four sets of duplicate chassis numbers involving eight vehicles. Cross verification revealed 94 and 127 vehicles registered with the DTO, Shillong shared common chassis/engine number with the vehicles registered with DTO, Aizawl.

(Paragraphs 6.4.8.1 & 6.4.8.2)

Out of 56,284 records, 21,909 records had no vehicle insurance detail rendering more than 39 *per cent* of the data redundant. There were a number of cases of registration of two or more vehicles with common insurance cover note number.

(Paragraph 6.4.8.3)

Data capture was partial in many cases resulting in incomplete database.

(Paragraph 6.4.8.6)

The department failed to detect registration of 9,158 vehicles beyond the mandatory period of seven days resulting in non-levy of fine.

(Paragraph 6.4.8.8)

Registering fee of Rs. 15.19 lakh and minimum fine of Rs. 1.82 crore from 9,087 non-transport vehicles whose registrations have expired was realisable.

(Paragraph 6.4.8.10)

The department failed to detect 9,829 transport vehicles plying without fitness certificate resulting in non-realisation of fees of Rs. 19.66 lakh and minimum fine of Rs. 1.97 crore.

(Paragraph 6.4.8.11)

There was no documentation of modifications made to the application software, user requirement specification, system design *etc.* Business continuity planning and training needs were not adequately addressed.

(Paragraph 6.4.9)

#### **6.4.1 Introduction**

In Meghalaya, the assessment, levy and collection of taxes, fees and fines on motor vehicles are governed under the provisions of the Motor Vehicle Act 1988 (MV Act) and the Rules made thereunder and the Assam Motor Vehicles Taxation Act and Rules, 1936 (as adapted and amended by Meghalaya) and various notifications issued by the Government from time to time. The Transport Department also controls, supervises and regulates the working and functioning of the State Transport Authority (STA) and the regional transport authorities (RTA).

In order to achieve faster and better services, transparency and better monitoring of State revenue generated from the implementation of the MV the Act and Rules, the Government of India provided a standardised software 'Vahan', developed by the National Informatics Centre (NIC) to the Transport Department of Meghalaya. The department was also provided with technical assistance from the NIC, free of charge, for customisation and backend integration. The computerisation of District Transport Office, Shillong was taken up as a pilot project during 1996-97 and completed on 15 April 2002. The computerisation of the remaining DTOs is in progress (March 2007).

**It was decided to conduct an information technology (IT) audit of the 'vehicle registration system' in Meghalaya. It revealed a number of deficiencies which have been discussed in the subsequent paragraphs.**

#### **6.4.2 Features of the application software**

'VAHAN' package was upgraded and developed on Windows operating system using JAVA for the front end application program and Oracle 10G for the backend database. It automates management of information related to vehicle registration, identity of its owner and technical details of the vehicles. The system also manages information related to tax, fitness, permit, authorisation including interstate movement and insurance details.

#### **6.4.3 Organisational setup**

At the apex level, Commissioner and Secretary to the Government of Meghalaya, Transport Department is the administrative head of the department. He is assisted by the Commissioner of Transport (CT) who heads the Directorate of Transport. The CT is assisted by a Deputy Commissioner of Transport who is also the ex-officio secretary, STA. The Enforcement Wing is attached to the Directorate and is headed by a district transport officer (DTO). At the district level, there are seven offices each headed by a DTO who is also the ex-officio secretary, RTA.

#### **6.4.4 Audit scope and methodology**

The scope of the IT audit included the audit of system development and implementation and examination of controls in selected operational applications, viz. registration of vehicles and its allied activities and collection

of taxes, fees and fines for the period from the date of implementation upto March 2007.

An entry conference was conducted in July 2007 with the State Informatic Officer, DTO and resource persons of the NIC wherein the audit objectives, criteria and audit methodology were discussed. Audit was conducted during July and August 2007 through test check of the records of Commissioner of Transport at directorate level and the DTO, East Khasi Hills, Shillong.

#### **6.4.5 Audit objectives**

The IT Audit was conducted to examine

- whether the project was commissioned within a reasonable time;
- the accuracy and comprehensiveness of the data;
- whether adequate controls are in place; and
- whether the department has been able to effectively apply the software for the management of registration of vehicles and realisation of fees/road tax.

#### **6.4.6 Acknowledgement**

Indian Audit and Accounts Department acknowledges the co-operation of the Transport Department in providing the necessary information for the IT audit. The results of the IT audit were communicated to the department and the Government and were discussed in the Audit Review Committee (ARC) meeting in August 2007. The replies of the department/Government have been suitably incorporated in the respective paragraphs.

#### **6.4.7 System development**

##### **6.4.7.1 No time frame was set resulting in delay in commissioning of the project**

The project for computerising the vehicle registration system of the Transport Department, Government of Meghalaya was planned for completion during 1996-97 with the assistance of NIC, Shillong. For this purpose, *Vahan* software was installed at DTO, Shillong by the NIC, Shillong. The date on which the software was received by the department and installed by the NIC was, however, not on record. No time frame was set for completion of the project and hence it was commissioned only on 15 April 2002, i.e., five years after the due date.

Backlog data entry for DTO, Jowai had started from May 2005. However, the system was ready for implementation only in April 2007. In the remaining five

DTOs<sup>1</sup> the computerisation work has not yet started although fund of Rs. 40 lakh was sanctioned by the Government during March 2002 to October 2006. Works relating to site preparation is in progress.

**The Government should consider setting a time frame to different stages of the computerisation and ensuring early completion of the project.**

#### **6.4.7.2 Partial utilisation of processing capabilities**

Although *Vahan* system also manages information relating to permit and its validity including interstate permits, enforcement *etc.* these aspects have not been computerised. This has resulted in the department failing to fully utilise the processing capabilities available in the system.

**Since complete utilisation of the processing capabilities will ensure greater transparency, the department should fully leverage the advantages offered by the application software.**

#### **6.4.7.3 Modification/change management procedures**

The software received from the GOI was customised by the NIC, New Delhi to meet the needs of the State prior to its implementation. Thereafter, minor modifications were carried out by the NIC, Shillong from time to time as and when requested by the department. The changes/modifications carried out had, however, not been documented. This resulted in complete absence of trail as to whether the changes sought for had been carried out and approved.

**The Government should consider maintaining a well documented change management procedure for ensuring transparency and effective internal controls.**

#### **6.4.8 Analysis of databases**

To analyse the data pertaining to DTO, Shillong, assistance of departmental personnel and system engineers of the NIC was taken to download the data. The downloaded data was analysed using CAAT<sup>2</sup>.

##### **6.4.8.1 Duplicate engine/chassis number**

Engine and chassis numbers are the unique identification marks of a vehicle which are essential for its registration under the provisions of the MV Act and Rules made thereunder.

Analysis of the database revealed that there were 346 sets of duplicate engine numbers involving 784 vehicles. The level of duplication in each set ranged from two to eight. Similarly, there were four sets of duplicate chassis numbers involving eight vehicles.

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<sup>1</sup> Nongpoh, Tura, Williamnagar, Baghmara, Nongstoin

<sup>2</sup> Computer assisted audit technique.

Verification of the basic record in the combined register of vehicles in respect of 297 out of the 784 vehicles, revealed existence of duplicate engine/chassis number in 45 sets involving 93 vehicles in such records as well.

This indicated lack of validation control in the system to ensure uniqueness of engine and chassis numbers. This irregular acceptance of same engine/chassis number on multiple occasions may lead to allotment of two or more registration certificates for the same vehicle, enabling stolen vehicles to be re-registered and committing various insurance irregularities.

**It is recommended that strong validation controls be put in place to prevent such duplications.**

#### ***6.4.8.2 Duplicate engine/chassis number registered in other DTOs***

Cross verification of engine and chassis numbers of vehicles registered with the DTO, Shillong with those in the database of the DTO, Aizawl (Mizoram) revealed that chassis and engine numbers of 94 and 127 vehicles respectively registered with the DTO, Shillong were identical to those registered with the DTO, Aizawl. Scrutiny of the basic records maintained by the DTO, Shillong, viz., combined register, further revealed the following position in respect of 121 out of these 221 vehicles:

##### **Vehicles having duplicate chassis numbers**

- chassis numbers of 35 vehicles were identical to those of vehicles registered with the DTO, Aizawl;
- thirteen vehicles were transferred to/from the jurisdiction of DTO, Aizawl. But information was not captured in/deleted from the database;
- data entries were incorrect in case of three vehicles; and
- details of three vehicles were entered in the database, though the registration numbers<sup>3</sup> were not in use.

##### **Vehicles having duplicate engine numbers**

- Engine numbers of 44 vehicles were identical to those of vehicles registered with the DTO, Aizawl;
- eleven vehicles were transferred to/from the jurisdiction of DTO, Aizawl. But information was not captured in/deleted from the database;
- data entries were incorrect in case of one vehicle; and
- details of 11 vehicles<sup>4</sup> were entered in the database, though the registration numbers were not in use.

<sup>3</sup> (ML05-8826, ML05 D-8891 and ML05E-0910).

<sup>4</sup> (ML05-8826, ML05A-3481, ML05B-1559, ML05D-6895, ML05D-9627, ML05D-9993, ML05E-0910, ML05E-1221, ML05E-1576, ML05E-1687 and ML05E-2835).

**The above position indicates that the register maintained by the DTO, Shillong was severely deficient. The possibility of the existence of stolen/lost vehicles in the register of the DTO, Shillong could not be ruled out.**

**The Government should consider strengthening the validation control at the time of data capture and also establishing links with the National/State Crime Record Bureau to pre-empt the scope for registration of stolen/lost vehicles. Besides, cases pointed out in audit require further verification with the records of the DTO, Aizawl.**

#### ***6.4.8.3 Duplicate insurance certificate/cover note number***

Under the provisions of the MV Act and Rules made thereunder, every vehicle has to be insured prior to registration.

Analysis of the vehicle insurance database revealed that out of 56,284 records, 21,909 records had no data regarding registration number, period of insurance, the insurance cover note number. Thus, more than 39 *per cent* of the data redundant. Further, analysis of 34,375 records revealed 1,723 duplicate cover note numbers indicating lack of validation controls in the system and poor authorisation controls. The level of duplication ranged from 2 to 255. Moreover, these common cover note numbers were found to be shared by different insurance companies.

Analysis of database revealed that 18,093 registered vehicles (including 158 Government vehicles) did not have any insurance details.

Similarly, although insurance details of 426 vehicles were captured in the vehicle insurance database, these vehicles were not listed in the vehicle owner database. These omissions indicate serious deficiency in validation/input controls within the system. Further, in view of the existence of large number of duplicate cover notes, fraudulent use of insurance cover note numbers cannot be ruled out.

**It is recommended that the department should ensure that ‘Vahan’ database contains information of only those vehicles which are available in the ‘VT\_Owner’ table.**

#### ***6.4.8.4 Registration of vehicles on Sundays/national holidays***

Registration of vehicles is done only on working days. Audit, however, found that 553 vehicles were registered on Sunday, two vehicles on Republic day, five vehicles on Independence day, seven vehicles on Gandhi Jayanti and four vehicles were registered on Christmas Day which were either non-working days of the week or national holidays.

After this was pointed out, the DTO stated that there was no system to register the vehicles on Sundays/national holidays and that data rectification was being carried out.

**The Government should consider generation of the data of data entry from the system and strengthening of input and processing controls to prevent entry of incorrect data into the system.**

#### ***6.4.8.5 Data validation***

Unusual and improbable data suggests unreliability of data. Audit detected that the data of registration of 1,748 vehicles as entered in the data base was prior to the date of purchase of the vehicles. The number of days the vehicles were shown as registered prior to their date of purchases ranged from 1 day to 100 years.

Further, as per the MV Act and Rules framed thereunder, the road worthiness/fitness of a vehicle and issue of fitness certificate is a pre-requisite for registration. In 4,088 cases, the next due date for fitness certification of the private vehicles was shown to be beyond 15 years after the due date. In one case the date was shown to be 75 years after the due date. **Such inaccurate data indicates violation of the provisions of the MV Act and Rules resulting from lack of process control.**

**It is recommended that appropriate input and processing controls coupled with validation check be urgently incorporated within the system to prevent entry of incorrect data.**

#### ***6.4.8.6 Incomplete database***

As per the CMV Rules, form 20 has been prescribed for the registration of vehicles which seek information about the vehicles in 34 fields. The 'Vahan' package provides for capture of all the information.

Analysis of database, however, revealed that data capture was partial even in crucial fields. Data entry pertaining to mandatory fields such as date of purchase of the vehicle, father's name of registered owner, address, vehicle maker's name, vehicle model, engine number, seating capacity, horse power, unladen weight, month and year of manufacture, *etc.* have not been captured in many cases.

**It is recommended that the system may be revisited to make data entry in all the fields mandatory as required under the CMV Rules.**

#### ***6.4.8.7 Incorrect data relating to seating capacity***

The seating capacity in some cases has been incorrectly entered. For example, seating capacity of two wheelers had been shown to be between 3 to 259, light motor vehicles between 4 to 259, Palio ED as 985, Maruti Gypsy as 87 seater. These revealed lack of validation control. Since road tax is charged in case of transport vehicles depending on their seating capacity, wrong data capture of seating capacity would have adverse impact on the tax assessment.

Since the function relating to permit is still being managed manually by the department, there is no immediate impact. However, these data errors need to be rectified in order to ensure system readiness for switching over to computerised application.

**It is recommended that appropriate processing and output controls be put in place for ensuring data processing conforming to the provision of MV Act and Rules.**

#### ***6.4.8.8 Non-levy of fine for delay in registration***

CMV Rules provide that an application for registration of motor vehicle shall be made within a period of seven days from the date of taking delivery of the vehicle. Driving of unregistered vehicle attracts a minimum fine of Rs. 2,000 under section 192(1) of the MV Act.

Scrutiny of the database revealed that 9,158 vehicles were registered beyond the mandatory period of seven days (excluding grace period of two days provided for intervening Saturday and Sunday). However, as per the information available in the database, no fine was collected from the defaulters for delay in applying for new registration for delayed registration.

#### ***6.4.8.9 Road Tax***

The AMVT Act and Rules read with the MV Act, lay down that every owner of a registered vehicle shall pay road tax in advance either annually or quarterly in four equal instalments. Vehicles can go 'off road' on submission of an application in form 'H' and surrender of their licence and not pay tax for the concurrent period.

Analysis of the database revealed that 10,809 transport vehicles have not paid road tax amounting to Rs. 10.23 crore<sup>5</sup> (upto March 2007) even though they have not surrendered their licences or gone off road. This may not be the actual position of realisation of road tax but the computerised data showed such large extent of non-realisation.

Further, out of 59,418 registered vehicles, the database contains no information about the tax paid by 861 transport vehicles. Assuming that these transport vehicles have not paid their road tax only for a period of one year, a minimum road tax of Rs. 15.99 lakh is realisable along with penalty for delayed payment. The number of vehicles and the amount of road tax and penalty, however, stand qualified to the extent of correctness of data.

#### ***6.4.8.10 Plying of vehicles with lapsed registration***

As per the MV Act, a certificate of registration in respect of a motor vehicle, other than a transport vehicle, is valid only for a period of 15 years from the

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<sup>5</sup> Tax has been calculated as under: HMV at Rs. 3,840 per annum; MGV at Rs. 600 per annum & LGV at Rs. 240 per annum.

date of issue of such certificate. No vehicle can be used in any public place until its certificate of registration is renewed. In case of default, a minimum fine for driving without registration at Rs. 2,000 for the first offence and Rs. 5,000 for each subsequent offence is leviable.

Analysis of the database revealed that as on 31 March 2007, registrations in respect of 9,087 non-transport vehicles had expired. Neither had the vehicles been re-registered nor had they surrendered their registration certificate. As such, registration fee of Rs. 15.19 lakh and minimum fine of Rs. 1.82 crore<sup>6</sup> for using unregistered vehicle is realisable. The number of vehicles and the amount of registration fee and fine, however, stand qualified to the extent of correctness of data.

#### ***6.4.8.11 Plying of vehicles without fitness certificate***

The MV Act provides that a transport vehicle shall not be deemed to be validly registered unless it carries a certificate of fitness issued by the competent authority. A minimum fine of Rs. 2,000 for the first offence and Rs. 5,000 each for subsequent offences is leviable for driving a vehicle without registration fitness certificate.

Scrutiny of the database revealed that as of March 2007 certificates of fitness of 9,829 transport vehicles of different categories had expired but were not renewed. The enforcement staff of the department, however, failed to utilise the information available with them resulting in minimum fine of Rs. 1.97 crore<sup>7</sup> remaining unrealised. Besides, calculated at the minimum rate of Rs. 200 per vehicle, the department has also failed to realise inspection fees for issue of fitness certificate amounting to Rs. 19.66 lakh in respect of these 9,829 vehicles. The exact amount could not be worked out due to non-capture of data indicating the type of vehicle. Beside the number of vehicles, the amount of fee and fine also stand qualified to the extent of correctness of data.

**The Government should consider making generation of exception reports at regular intervals to identify vehicles violating the MV Act and Rules.**

#### ***6.4.8.12 Lack of continuity of registration numbers***

In a single series, 9,999 vehicles i.e., upto four digits can be awarded registration numbers. These numbers should be awarded in a sequence to monitor the year of registration of the vehicle.

Analysis of the database revealed that at DTO, Shillong registration in a subsequent series was started before the ongoing series was exhausted. The number of registration numbers missing in the six series checked is as mentioned below:

<sup>6</sup> Rs. 2000 x 9,087 = Rs. 1,81,74,000

<sup>7</sup> Rs. 2000 x 9,829 = Rs. 1,96,58,000

**Table 6.15**

Series	Number of registration numbers found missing in the series
ML05	3644
ML05A	1761
ML05B	943
ML05C	567
ML05D	10
ML05E	122

Test check of the information available in the database with the basic record (combined register) showed that the database contained information of 42 registered vehicles whose number were unused as per the combined register. Conversely, audit also detected eight cases where the vehicles were registered but the information had not been captured in the database resulting in incomplete computerisation.

**It is recommended that the department take steps to ensure methodical and systematic allotment of registration numbers and capture of information of all registered vehicles.**

#### **6.4.9 General controls**

General controls create an environment in which the application systems and application controls operate e.g., IT policies, standards and guidelines pertaining to IT security and information protection. The observations on the adequacy of general controls are mentioned below:

##### **6.4.9.1 Lack of documentation**

A proper system analysis requires that each module of the system proposed to be developed is properly documented. The department does not have a written and authenticated documentation of the modules developed for 'Vahan' and implemented so far. No documents such as the 'user requirement specification', 'system design document', etc. were available with the department. Hence, the system is not user friendly as it lacks details of installation procedure, input and output files, linkages of files, details of files and tables created, description of the columns thereof, etc.

**The Government should consider preparation and maintenance of system documentation and manuals including training manuals.**

##### **6.4.9.2 Business continuity planning**

Business continuity planning is necessary for recovering key business processes in the event of disaster. The objective is to reduce downtime and minimise loss to the business.

Scrutiny of the vehicle registration system revealed that the department has no methodology of backing-up data. On enquiry, the System Engineer (SE) from NIC stated that NIC regularly took back-up and stored the data at NIC,

Shillong. The SE also stated that mock trial of system recovery was also done regularly to ensure uninterrupted functioning in the event of a system crash. However, no records were maintained by the department to indicate the date(s) on which the back-up were taken, the date(s) on which the mock trials were conducted. There was no provision for off-site storage of back-up data. The department also has no formal arrangement with the NIC, Shillong to ensure that back-up are taken regularly by the NIC. Lack of formal agreement places the department at the risk of not having regular back-up.

#### **6.4.9.3 Lack of security policy**

In view of the inadequacy of the controls pointed out above, it is important to put in place security practices to protect its assets and data and to ensure confidentiality, integrity and availability of the system that stores and processes data. The department has, however, not yet framed its IT security policy.

**The Government should consider drawing up an IT security policy with adequate documentation with a credible threat assessment mechanism and disaster recovery and business continuity plan for harnessing optimum output from the system.**

#### **6.4.10 Monitoring and supervision**

Involvement of senior management in implementation of the project was found to be deficient. There has been over reliance on the NIC for system maintenance, administration and back-up. There is no monitoring of data entry as has been evidenced by large number of incorrect/improbable data.

**The department may consider putting in place a system for ensuring adequate supervision of the data entered in the system and drawing up a structured training programme for its IT staff.**

#### **6.4.11 Conclusion**

There has been delay in commissioning the project. Even after a lapse of five years from the date, all the modules are not yet operational and some of the applications are still being done manually. There is a lack of in-house expertise for running the system. Involvement of top level management in the system development and its functioning was inadequate. Lack of adequate supervision has resulted in erroneous data capture thereby resulting in data redundancy. The department has not been able to extract useful information from the system regarding defaulters and has thus failed to exploit the full potential of the system.

#### **6.4.12 Summary of recommendations**

The Government should consider

- setting a time frame for different stages of the computerisation and ensuring early completion of the project;
- maintaining a well documented change management procedure for ensuring transparency and effective internal controls;
- strengthening the validation control at the time of data capture and also establishing links with the State/National Crime Record Bureau to pre-empt the scope for registration of stolen/lost vehicles;
- generation of the data of data entry from the system and strengthening of input and processing controls to prevent entry of incorrect data into the system;
- making generation of exception reports at regular intervals mandatory to identify vehicles violating the MV Act and Rules;
- preparation and maintenance of system documentation and manuals including training manuals; and
- drawing up an IT security policy with adequate documentation with a credible threat assessment mechanism and disaster recovery and business continuity plan for harnessing optimum output from the system.

The matter was reported to the Government in August 2007. Government while admitting the audit points, stated (February 2008) that necessary action would be taken as recommended by Audit and also assured that remedial action would be taken wherever necessary.