

The Ontario TECHNOLOGIST

VOLUME XXXVI NUMBER 6


NOVEMBER/DECEMBER 1994



DATA MANAGEMENT

Interactive network a smoother ride for automotive industry

Page 8

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TECHNOLOGY

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Front Cover: No matter where you are in the world, remote engineering drawings can be brought to your computer screen in seconds — if you are hooked into an interactive network with a drawing management system. Don't expect the part itself, however: here a modified image of a compensating weight for automotive drive shaft balancing, by Hayes-Dana Inc., Drive Train Division. Photo is by Scott Augustus, Image Works, St. Catharines. Story on page 8.

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THE ROLE OF AN ACCURATE LOGBOOK

By KALYANAM MURUGAIYAPILLAI, CET

Preventive Maintenance



Records of all maintenance on a machine are an important basic source of information. To achieve the best performance, the record book — or maintenance logbook — should be studied and analyzed regularly as a means of monitoring the machine's performance.

Breakdown maintenance is one which has an immediate effect on production. A breakdown may happen for many reasons — expected or unexpected. But this should not be taken as the regular life of maintenance; the main aim of the maintenance department is to minimize these breakdowns to ultimately improve production as well as the machine's performance. One basic step is to implement Preventive Maintenance (PM).

Long-term effectiveness

While PM is definitely effective on a long-term basis, it may not be realized immediately in the same way as breakdown maintenance — perhaps one reason why many companies are not paying serious attention to PM. (Breakdown is like taking a tablet for a cold or headache, whereas PM is like taking a vitamin tablet or some kind of planned activities to improve one's health. The effect of the headache tablet can be felt soon, whereas the other may not be fast but will be good in the long term.)

Most machine manufacturers will describe all the maintenance steps required on a regular basis. It is essential to keep reviewing those steps, based on the practical experience with any machine. This review is possible only if all maintenance activities are recorded and analyzed periodically.

Computers make it easier

Computer technology facilitates our maintenance record-keeping. By using database software, we can create basic data files which can be linked by simple program techniques for ease of handling. The database is an effective start-up for any small industries which do not have computer usage for maintenance.

Here is one such typical system:

Work orders: All jobs to be done can be stored in one database. This list can be sorted out, based on the type of work — such as breakdown, PM and others — giving a clear picture of all works to be done.

The computer screen will always display this listing; the records will have a serial number generated by the system and this will be the main reference for the Logbook record.

Logbook: After the completion of any work order, information such as Maintenance Finish Time, Work Done details, Spare Parts used, Machine Counter reading, Total Maintenance time can be stored in another database — which is the Main Logbook. In each of these records some specific Codes can be given to identify the nature of the Work and problem Area or Part of the machine.

Not only are these codes very useful in later retrieving all records for the performance study of the machine, they also help new maintenance personnel to learn faster.

Spare parts: All standard spare parts for all machines can be listed in the database by Stock level, Minimum Order Quantity level, Cost, Order status, Location, etc. Parts entered in the Logbook will be cross-referenced with this listing to update the stock as well as

to check for the correct part number entry.

Machine reference: For each machine, there will be a Short Reference Name or Number which is the main cross-reference for all these files. This file can have all important reference information such as Model No. and Serial No. for all machines.

When a Work Order is opened, the Machine Name will be cross-referenced with this file, to verify the correct name entry.

This kind of programming has several advantages:

- The information can be keyed in more quickly and more conveniently, and any maintenance person can enter the information without having knowledge of the particular software.
- The system offers a fast way of accessing the information and it enables a detailed study of the machine's performance, which in turn provides a way to improve the maintenance performance — and hence, the production performance.
- While you enter the information and store it, the program can store more information in another reference database which can give instant statistical information such as Problem Frequency occurrence or Total Number of Records.

PM is like taking a vitamin tablet or some kind of planned activities to improve one's health.

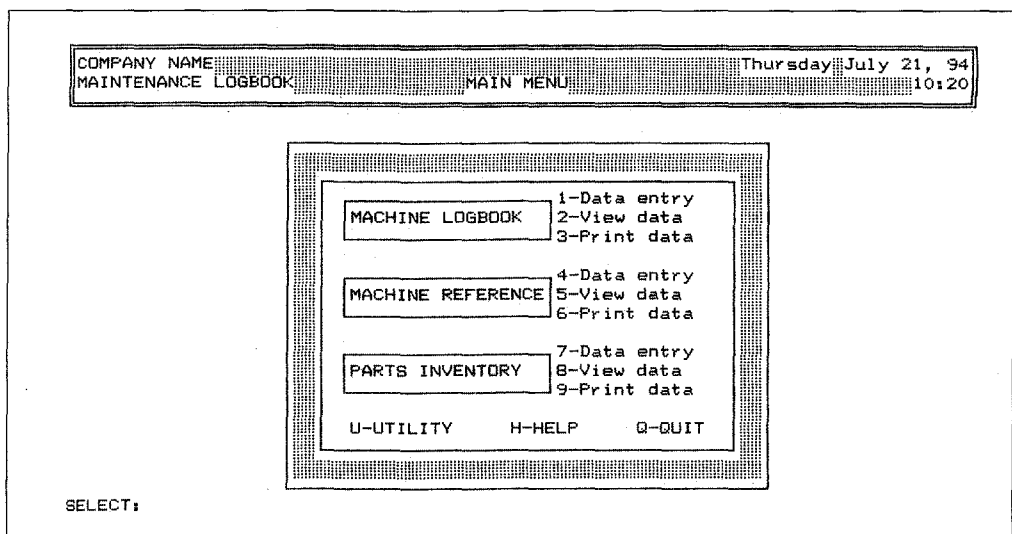


Figure 1

TYPE README.1ST

MACHINE LOGBOOK (VERSION 1.0)

JULY 21, 1994

This program is to maintain Machine maintenance records. You will be fully guided through User friendly MENU driven screens. There are HELP information, to give additional guidance.

HOW TO INSTALL THIS PROGRAM ?

1. THIS PROG SHOULD BE RUN IN HARD DRIVE.
(Hard Drive should have atleast 1.5 M space)
2. CREAT A DIRECTORY NAMED AS "MLB" (OR AS YOU LIKE)
3. COPY ALL FILES FROM THE PROG DISK TO THIS DIRECTORY
4. THEN IN THIS DIRECTORY, TYPE "MLB" TO START THIS PROGRAM

ALL .DBF, & .NTX FILES WILL GROW IN SIZE AS YOU USE MORE AND MORE. IT IS ADVISABLE TO HAVE A REGULAR BACKUP OF THESE FILES IN FLOPPY DISKS.

Yours comments and suggestions are greatly appreciated.

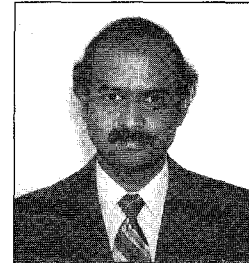
Figure 2

Kal Murugaiyapillai graduated from electrical engineering at Valivalam Desikar Polytechnic, Tamilnadu, India, in 1977. He also graduated in 1984 from Singapore Polytechnic and, in 1993, in industrial electronics from DeVry Institute of Technology, Weston, Ontario. In addition to his OACETT membership, he is an associate of the Society of

Engineers (United Kingdom). Kal has worked for many years in research, design, development, and preventive maintenance — holding various positions for electrical and electronics manufacturers in India, Singapore and West Germany before moving to Canada. For the past five years he has been a maintenance technician with Invotronics

Manufacturing (an Atoma International Company) in Metropolitan Toronto.

He comments that he is "eagerly looking forward to working in this new and challenging environment where I can continue to achieve all targets and meet all deadlines as successfully as in the past." Interested readers are invited to call Kal at 416-297-4820.



- The Logbook data can be printed by simply selecting commands for "which machine" and for "which month."
- Records can be analyzed faster and more effectively than in any manual way of record keeping. Depending on the maintenance persons involved, the stored information can provide many other advantages as well.

Illustrations

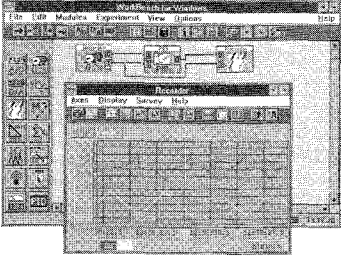
Fig. 1 is the Main Menu of one such program named MAINTENANCE LOGBOOK. This system will run in any IBM-compatible XT/AT computers without the need for any other supporting software. Interested readers may obtain a friendly free copy from the author; please call Kal at the telephone number ending this article.



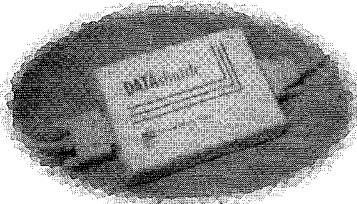
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