

SALUTE-CMMS White Paper

Maintaining the Capability to Produce

Maintenance Management

The Hurdles in the Way of Production

The function of maintenance management is to ensure uninterrupted production, and therefore a maintenance management program is vital to the success of any company. There are many steps along the way where the progress of the end product can be impeded and it is important that equipment breakdowns do not become a bottleneck. It is a nightmare to have your production schedule set back because of a piece of equipment that broke from not being lubricated as scheduled. Not only do you have the cost of an expensive repair that could have been avoided, but you also have to deal with losing a days production on the machine. All of the other activities in a company depend on having well-maintained equipment and efficient production. The product is your main deliverable and without it, your company cannot exist.

Maintenance management is really about managing expensive resources to get the most out of those resources. The resources a maintenance manager is in charge of (parts, tools, equipment, technician labor) are an investment and the more productive those resources are, the more return on the investment. An overload of spare parts increases inventory without providing any value. Missing or misallocated tools creates unnecessary purchases. Maintaining equipment that should be replaced means wasted opportunity. And not providing repair technicians with the resources they need makes them ineffective. A company depends on the maintenance manager to make decisions and provide an infrastructure for effective use of resources. In order to prevent as much downtime as possible it is necessary to have information that allows a manager to make an informed decision. Data needs to be stored, recorded, and presented in a way that allows interpretation. Plus, whenever possible, the manager's workload should be reduced by automating tasks and reducing paperwork.



SALUTE-CMMS

Maintaining the Capability to Produce

SALUTE-CMMS (computerized maintenance management system) is the answer to the problems of maintenance management with rich information reporting and extensive maintenance task automation.

SALUTE-CMMS manages all aspects of maintenance including equipment, inventory, work requests and scheduling, failure tracking, and information reporting. In manufacturing, getting more use out of your equipment means less overhead costs and a stronger bottom line. Preventative maintenance both extends the equipments life span and prevents an unexpected stop in production. SALUTE-CMMS schedules necessary preventative maintenance so that equipment failures are reduced. Scheduling being based on time, meter, availability, or any possible combination. Information on past failures allows for predictive maintenance functionality, where equipment that is known to fail after a period of time can be serviced before it breaks.

When equipment does break you can account for the expenses and adjust the inventory as needed. SALUTE's inventory management records the inventory that is used by each machine or in each area for detailed cost accounting. Inventory levels can be monitored so that parts do not drop below certain minimum levels and automatically ordered when they do reach that level. Or, inventory currently located in other places can be moved to where they are required. When a job is scheduled, the inventory is checked for required part availability so that adjustments can be made. Repairable parts, which at one time were associated with a machine, are tracked through the repair process.

From Managing Automation, February 1999

Before purchasing a CMMS package, ask the following questions.

Will the package:

- Increase maintenance productivity?
- Improve equipment availability?
- Reduce downtime?
- Reduce stock shortages of replacement parts or emergency purchases?
- Increase planned maintenance?
- Reduce emergency repairs?
- Reduce overtime?
- Increase operating profit?

When preventative or demand maintenance is required, SALUTE schedules the necessary resources to maximize productivity. A work order is made only after checking for required inventory, checking out required tools, and determining if the equipment is available. Then the work order is approved either manually or automatically based on type. Information on location and documentation from similar past repairs are provided for each task and maintenance technicians with experience in similar problems are highlighted when scheduling. Scheduling allows for better estimation of labor needs and time needed for unexpected, demand, maintenance. Maintenance tasks are given priority so that preventative maintenance can be delayed if necessary. After the task is complete, the true cost of a work order, including parts and labor, can be determined and compared to the estimated cost.

When the SALUTE-CMMS solution is implemented an extensive database of information (requirements, parts usage, etc.) on each piece of equipment will be created. The information in this database provides a valuable maintenance and performance history of the equipment. This history is analyzed by SALUTE to provide detailed failure tracking. Problem areas can be quickly determined and corrected. A piece of equipment can be discontinued if the frequency of repairs is high enough to justify replacing the machine. Problems can only be corrected if you have a way to know what those problems are.

SALUTE-CMMS can stand alone as a basic system, be fully integrated with existing systems, or used with other SALUTE service, distribution, and manufacturing products to provide a complete enterprise-wide solution. A powerful maintenance management system needs to interact with information from across the enterprise. When inventory becomes low, an order is created and that order needs to be reflected in the enterprise's accounting program. SALUTE completely interacts with other enterprise programs so that results are consistent and data only needs to be entered once. If you do not currently have an ERP package, Applied Computer Excellence provides accounting, customer relationship, warehouse management, and service modules to create an enterprise-wide solution.

Advanced reporting features turns abstract data in SALUTE's database into clear information. Graphical charts are created with dynamic real-time data and allow you to view trends. Drill-down capability allows you to browse logically through trouble spots and areas of specific interest. You can even drill-down to the machine or item unit level. Advanced reporting allows for informed decision-making with true business intelligence.

The main return on investment from implementing SALUTE-CMMS comes from decreasing, as much as possible, down-time for each machine. However, scheduling preventative maintenance instead of doing "last minute" maintenance lowers overall maintenance costs and increases equipment life. Immeasurable items such as improved customer satisfaction from fast orders and high quality orders is an extra benefit. The maintenance system also allows you to hold less inventory and make fewer special orders, all adding up to a significant savings.

From Material Handling Management, June 2000

Typical Ranges of Improvement for Maintenance Issues After CMMS Implementation

- Increased craft labor productivity -- 20% - 30%
- Increased equipment uptime -- 15% - 25%
- Increased level of planned work -- 25% - 30%
- Reduced emergency repair -- 10% - 25%
- Reduced parts inventory -- 20% - 30%
- Reduced maintenance costs -- 10% - 20%

Web-Enablement

Business E-Commerce

The explosion of the internet has changed the way business computing is conducted. Applied Computer Excellence is dedicated to taking full advantage of the new opportunities the internet provides. Several technologies exist to bring SALUTE-CMMS to the internet. We believe that the functionality SALUTE and our other software programs provide, which at one time could only be provided to the consoles that were connected to the server, can now be provided to anyone with an internet browser.

IBM iSeries AS/400

The Platform of Business-Critical Reliability

SALUTE-CMMS was designed for the IBM iSeries, formerly AS/400, platform. The developers at ACE chose the iSeries 400 platform because it offers many advantages in a business environment. iSeries is one of the most reliable application servers available. "iSeries customers have experienced on average less than 9 hours of unplanned down time per year", according to data collected by IBM. This means that iSeries eServers can provide the 99.9% availability that is needed for applications that are vital to your business. Due to its built in security architecture, the iSeries is secure even when exposed to the internet. To date, no viruses have been reported on the iSeries 400 platform. The exclusive use of objects allows data to be accessed and modified in only predefined ways. iSeries provides not only a high-quality solution, but also a lower cost solution.

SALUTE-CMMS can be implemented on any AS/400 on the network. SALUTE also interfaces with other servers platforms on the network.



Applied Computer Excellence

Implementation and Support

Applied Computer Excellence is an IBM Business Partner providing solutions since 1986 and specializing in the areas of manufacturing, service, and distribution.. Since our products are modular and customizable you can avoid paying for extra features that you don't need and when your requirements increase you can easily add new functionality. Productivity boosting devices such as RF equipment, label printers and scanners, touch screen displays, and electronic scales are supported and interfaced with the software. Applied Computer Excellence provides a complete solution; we follow through the whole implementation process by providing software support, training, customization, and business process consulting.