THE POWER TO KNOW®

How can we predict future maintenance needs for travel and transportation assets?

Business Impact

"We use SAS in almost every aspect of the business. [It makes] the most difference on a day-to-day basis [with] railcar maintenance and railcar transportation costs. It's resulted in at least $1 million in savings this year … and we have a productivity deck of multiple millions of dollars in maintenance costs that are all based on picking the right shop and repairs. SAS is right in the middle of us doing that all the time."

Bill O'Neill
CIO, GE Rail Services

Challenges

- **Optimizing fleet planning and maintenance**. Unscheduled downtime and delays are some of the biggest costs for transportation companies, resulting in millions of dollars in expenditures, penalties and brand damage.
- **Understanding the impact of reliability and maintainability on costs**. Optimal metrics gathering and decision making is inhibited by being unable to support your fleet at the manufacturer, assembly, sub-assembly and component levels.
- **Detecting billing anomalies and unnecessary maintenance**. Failing to detect unnecessary maintenance patterns or repair costs that are higher than the market rate results in unnecessary asset downtime and increased costs.
- **Maintaining the right spare parts inventory**. Ineffective spare parts planning results in excessive inventory or out-of-stock parts causing high parts costs and disrupted or delayed service, which affects customer satisfaction.
- **Identifying events and conditions causing excessive dwell time while assets are out for repair**. Excessive dwell time causes assets to be out of service longer than necessary.

YOUR GOAL: Reduce costs and asset downtime by taking a more proactive and predictive approach

Travel and transportation companies must continually strive to balance speed, service, flexibility and service support with reducing costs and improving profits. A key part of accomplishing these objectives is to keep transportation assets – railcars, marine vessels, aircraft and ground vehicles – operating at peak performance with maximum uptime and optimal operational performance.

Because of higher costs of unplanned downtimes, especially catastrophic failures, and excessive or unbalanced parts inventories, it is time to shift maintenance and service strategies from reactive to proactive and predictive. It is also important to uncover billing anomalies when analyzing service repairs to detect unnecessary repairs or overbilling.

OUR APPROACH

For 35 years, companies have relied on SAS to handle complex forecasting and data management needs with large data volumes. Our approach is to provide software and services to help you:

- **Predict emerging issues and maintenance requirements** to keep your assets in service and to maximize uptime by having the ability to identify fleet attributes (age, operating conditions, type of use, etc.) and how they correlate with reliability metrics to form a usage profile.
- **Understand the impact of reliability and maintenance costs** by being able to forecast maintenance costs and perform scenario analysis with different fleet strategies to help improve operating costs, warranty recovery, vendor sourcing and labor optimization.
- **Reduce repairs and maintenance costs** by detecting billing anomalies and transportation asset repair patterns to help reduce unnecessary costs.
- **Identify events and conditions that cause excessive dwell time** for assets far enough in advance to take action to minimize dwell time. Increase asset uptime to prevent revenue loss and missed growth targets caused by disruptions in asset utilization.
- **Optimize your workforce** to assure the right mix of skills, locations and timing in harmony with asset deployment.

SAS' solutions for asset and operations optimization enable you to assemble data from many platforms and systems to create a picture of what has happened and then transform it with analytic and predictive capabilities to project what's going to happen. Analytics and predictive data mining capabilities help you identify the real drivers of performance issues out of hundreds, or even thousands, of measures and conditions. The availability of data helps to troubleshoot faster and initiate the best corrective action, driving continuously improved reliability and asset efficiency as well as better quality. This foresight can increase reliability and asset uptime thus increasing return on invested capital.

THE SAS® DIFFERENCE: Providing integrated data management with predictive modeling

Most transportation systems and equipment have some sort of metering, monitoring or surveillance system – each producing staggering volumes of data. Only SAS delivers:

- **A comprehensive view across all systems and equipment**, taking into account system interdependencies, to monitor overall performance accurately.
- **Data integration and management** that enables you to combine data from sensors, inspections and maintenance, historical records, inventory, warranty claims and more into one database for monitoring, model development, root-cause analysis and reporting.
- **Predictive modeling** to accurately predict assets and equipment failures before they occur and detect service, dwell time and billing anomalies.
- **An integrated analytical workbench** that provides engineers with powerful, integrated root-cause analysis of asset failures and performance issues.
- **Enterprise business intelligence delivered through a Web-based interface** that delivers critical information in an easy-to-understand format. Users can view dashboards at a glance for a quick overview of issues, drill down to performance trends and disseminate strategic information across the organization.

SAS software is unique in that it doesn't replace the diverse systems you already have in place. Rather, it sits on top of what you have, turning raw data from all systems and equipment into information that can be directed to the right person, in the right format, at the right time. The result is true big-picture monitoring on a scale no other vendor can provide. With SAS, you can take a modular approach to implementation, starting where needs are greatest and adding as operations grow and needs evolve.

CASE STUDY: A major rail freight provider.

Situation

As a service provider for all aspects of rail car and fleet management with operations in North America, this company needed a way to contain rail maintenance and transportation costs.

Solution

SAS supplied the company with tools for data extraction, modeling and statistical analysis, including SAS Business Intelligence software so it can create easy-to-use, Web-enabled solutions and reporting.

Result

By using SAS in almost every part of its business, including improving credit and collections processes and meeting regulatory requirements, the company has been able to save $1 million so far.

What if you could ...

Maximize uptime

What if you could predict failures and maintenance needs of transportation assets and identify root causes for further maintenance optimization?

Predict or prevent asset failures

What if you could have a comprehensive understanding of the impact of reliability and maintenance costs on your fleet?

Detect repair and billing anomalies

What if you could detect and prevent unnecessary asset maintenance and uncover billing anomalies?

Reduce dwell time

What if you could identify events or conditions that cause excessive dwell time for railcars and trucks far enough in advance to take action?

You can. SAS gives you THE POWER TO KNOW®.

SAS FACTS

- SAS was named a Progressive Manufacturing 100 Technology Partner in connection with The Dow Chemical Company's placement on the 2009 Progressive Manufacturing 100 list from Managing Automation Media.
- *Manufacturing Business Technology* named SAS to its annual Global 100 rankings in the Business Performance category.

Learn more about SAS software and services for travel and transportation: www.sas.com/industry/travel/index.html

SAS THE POWER TO KNOW®

SAS Institute Inc. World Headquarters +1 919 677 8000
To contact your local SAS office, please visit: **www.sas.com/offices**