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Heating Up

By Daryl Crear, 2010-2011 AEMP National President

As your 2010 National President, I find it’s an exciting time to be involved in the Association of Equipment Management Professionals. Members and individuals across the country are joining together to advance our industry. There’s a fresh energy and the reason is simple: The AEMP community has something unique to offer… and individuals and companies are coming to AEMP to get it. Not just education, but knowledge.

And AEMP’s work is being recognized across the industry. The enthusiasm among AEMP leaders has never been stronger: The new telematics standard has been rolled out, the emissions committee is hard at work with green initiatives, the AEMP University is on track to start delivering high-quality education right to your desktop, and the AEMP Web site is beginning to build momentum.

The increase in conference attendance proves that now, more than ever before, it is time for equipment-management professionals to pull together and share their knowledge first hand in face-to-face dialogue. Speaking with equipment professionals who are in similar situations gives each of us deeper insight into how other industry leaders are coping with the downturn. Never before have I seen so many passionate equipment-management professionals come together from all facets of the industry — rentals, auctions, owners, economists, manufacturers, dealers — to discuss forecasting, trends and industry observations as we prepare for the upcoming boom.

If you were in attendance at the AEMP Annual Management Conference in Dallas, you have felt this energy. If you weren’t, ask yourself if you can really afford to sit on the sideline when key leaders are joining together like never before.

The industry is heating up again…and AEMP is fanning the flames.
The 2010 Fleet Master was honored at a dinner during AEMP’s 28th Annual Management Conference in Dallas. Fleet Masters are recognized for their practices in the areas of human relations, vendor relations, asset management, maintenance management, and technology. The Fleet Masters Award was created with Construction Equipment to honor equipment-management professionals who excel in meeting the unique challenges inherent in delivering cost-effective management of mixed fleets of on- and off-road equipment.

Nominations are solicited from the entire industry. For 2010, Lee County Fleet Management, Fort Meyers, Fla., won the Fleet Masters award as a public fleet.

Lee County Fleet Management is a division within County Administration and is responsible for “cradle to grave” equipment services, including: vehicle and equipment maintenance and repair, governmental and environmental compliance, vehicle and equipment specification, development, equipment acquisition and disposal, repair part acquisition, and the purchase and resale of fuel for County vehicles and equipment.

Lee County’s 1,925 pieces of equipment comprise a diverse collection of automotive and heavy equipment including: cars, vans, light, medium- and heavy-duty trucks, loaders, dump trucks, sweepers, bucket trucks, tractor mowers, trailers, and various other types of equipment and attachments. In 2009, Lee County Fleet Management generated approximately 30,000 work orders for vehicles and equipment.

Lee County claims six years as an ASE Blue Seal Shop with at least 75 percent of its technicians ASE-certified in at least one area. They also employ eight Master Technicians, two EVT Master Technicians, and three Certified Equipment Managers. In total, Lee County has a staff of 32 fleet professionals covering 73 County divisions.

Lee County Fleet Management is not new to awards and praise. In 2009, Lee County was a runner up for the Fleet Master award. In 2004, Lee County was named the #1 Fleet in North America and is continuously included in the top 100 fleets in North America — Hall of Fame. In 2003, they won the Utility Fleet Management Magazine’s “Most Efficient Fleet Operation in North America” award.

Lee County has worked hard to achieve these honors — streamlining and improving their fleet management in a number of ways, saving the county hundreds of thousands of dollars. Lee County was the first U.S. fleet to achieve non-generating status for hazardous waste — other governments have striven to achieve what Lee County did, but few have been able to maintain success.

Director Marilyn Rawlings, CEM, and her staff at Lee County have achieved what few fleets thought possible. If their two-inch binder full of accomplishments doesn’t prove it, their 24 letters of recommendation surely do.

The Fleet Masters awards are sponsored by the AEMP Strategic Alliance Partners: Castrol, Caterpillar, Construction Equipment, International, IronPlanet, John Deere Construction & Forestry, Komatsu, Trimble and Volvo Construction Equipment.
THE AEMP FOUNDATION ANNOUNCES THE 2010 National Technicians of the Year

In mid-January, a panel of judges analyzed nearly 30 Technician of the Year applications, narrowing down applicants to one winner from the public sector and one winner from the private sector.

The 2010 private-sector Technician of the Year is Jacques Laschet, who has been with RMCI for more than four years. Laschet is a graduate of IFPME in Verviers, Belgium, where he majored in hydraulics and graduated as a constructor and fitter repairman. Laschet is committed to safety and boasts a perfect safety record. He has also participated in 10 hours of OSHA training, fire safety, DOT compliance, and defensive driving courses.

Laschet is an outstanding diagnostician who has the ability to solve problems on machines with which he has little prior familiarity. He has disciplined himself to follow the correct path of diagnosis for each problem using his expertise, experience and savvy. In an industry where models change year from year, Laschet has the great talent to adapt to changes as needed. Individuals outside RMCI recognize Laschet’s talent with diagnosis.

According to BruceStats from Golden Equipment Co., Laschet’s problem-solving abilities are “far above” average and his goal is “to be the best technician he can be. Jacque truly believes that this is his career, not just a job.”

The public sector Technician of the Year is Scott Jensen from Sarasota County (Fla.) Fleet Services. Jensen holds the elite Heavy Equipment Technician II position — a position that is nominated by peers, rated by shop managers, and hand-selected by the fleet manager. Jensen is a Moorhead Technical College honors graduate.

Jensen has an extensive list of more than 30 certifications. Not surprisingly, he is one of only 18 technicians in the nation to hold three Master Level EVT certificates: Master Fire Apparatus Technician, Master Ambulance Technician, and Law Enforcement Vehicle Technician.

Jensen is the representative of the Fleet Services Safety Committee for Pinkney Ave Fire/Emergency Services repair facility, providing input and instruction on safety techniques and protective equipment. He also monitors shop compliance for FDEP/EPA regulations and safety compliance.

Jensen’s proficiency and expertise with electronic and electrical systems allow for a quick repair on mission-critical issues. He performed an in-chassis engine rebuild on a fire engine that included pistons, rings, bearings, injectors and gaskets. The engine now runs better than ever, and he saved Sarasota County more than $5,000 and 30 days of downtime.

The AEMP Technician of the Year Award was established in 1989 to spotlight the skill sets required of today’s professional technician. Award winners are selected based on professionalism, technical skills, innovative trouble-shooting and diagnostics, and contributions to the technician profession. The AEMP Technician of the Year award is sponsored by John Deere Construction & Forestry and the AEMP Foundation. The awards luncheon is sponsored by Trimble.
Brannigan Chosen as Member of the Year

Dick Brannigan, CEM, was voted by the AEMP membership as the 2010 Member of the Year. The Member of the Year Award is given in recognition of an individual’s outstanding service to AEMP through active participation and contribution of new ideas, practices or innovation in maintenance or management of heavy-duty equipment.

Brannigan is the Equipment Operations Manager at the John R. Jurgensen Company. A member since 2001, Brannigan has served as Education Committee Chairman, a member of the Telematics Task Force, and as President of AEMP. As President, Brannigan advocated a telematics standard for the industry, creating and serving on the task force. Additionally, he is responsible for mentoring no fewer than three current board members and getting them involved in AEMP leadership. Mr. Brannigan currently serves on the AEMP Foundation Board of Trustees.

Caterpillar, John Deere, Komatsu and Volvo Awarded Associates of the Year

For the first time in AEMP history, the award was given to multiple member companies: Caterpillar, John Deere Construction & Forestry, Komatsu, and Volvo Construction Equipment. These four associate members were selected for a common reason and a common effort: furthering the industry’s first telematics standard. These OEMs voluntarily agreed to work together to successfully develop the standard and are now enjoying the success of their hard work, as the telematics standard is now available.

Porter Honored with Richard Hawkins Award

Carl Porter from John Deere Construction & Forestry was selected for the 2010 Richard Hawkins Award. The Richard Hawkins Award is presented annually to the outstanding associate who best exemplifies the dedication of Richard Hawkins, who set the standard for service and contributions to the mission and goals of the AEMP.

Porter has been a member since 2005. During that time, he has donated countless hours to AEMP, serving on the Board of Directors and Education Committee, which he currently chairs. He is well respected among AEMP leadership for his ability to “take off his John Deere hat and put on his AEMP hat.” While serving his second year as Education Committee Chairman, Porter was the driving force behind the development of a new initiative: AEMP University.
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The Certified Equipment Manager (CEM) Certification program was developed by AEMP and is the recognized certification in the industry. The CEM program is designed to evaluate professional standards, enhance individual performance, and recognize those who demonstrate knowledge essential to the successful practice of equipment maintenance and fleet management. The Equipment Manager Specialist (EMS) designation recognizes the achievement of equipment managers in the first five years of their career when they are developing the knowledge and skills to become a CEM.

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2009
Wayne Baumgartner, CEM
Mike Blankenship, CEM
Timothy P. Boland, CEM
Lowell Burgett, CEM
Kevin Caith, CEM
Robert Electa, CEM
Richard Hahn, CEM
Ron Kennedy, CEM
Larry LeClaire, CEM
Frank Lloyd, CEM
Donald Lubinski, CEM
Jason Marmann, CEM
Richard T. Miller Jr., CEM
Ronald Sharp, CEM
Jim Sulkanen, CEM

2008
Bradley Amert, CEM

2007
James Amspaugh, CEM
Richard Behrens, CEM
Danny Brachner, CEM
John Brewington, CEM
Robert Bucklew, CEM
Randall Carter, CEM
Tommas Cochran, CEM
Daniel Connolly, CEM
Jeremy Croning, CEM
Robert Dry, CEM
Macon Ford, CEM
Dominic Galati, CEM

2006
Brent Baluff, CEM
Mark Bellamy, CEM
Robert Bogaerts, CEM
Myron Brubacher, CEM
Tom Burbank, CEM
Donald Carven, CEM
Keith Cox, CEM
Mike Demello, CEM
Ted Dechert, CEM
Kevin Edwards, CEM
Mike Finn, CEM
WW Ford, CEM
CW Francois, CEM
Mark Gannon, CEM
Robert Genter, CEM
Ed Garstado, CEM
Charles Hall, CEM
Mac Harless, CEM
James Hardley, CEM
Gene Huffman, CEM
George Hinchak, CEM
Brent Johnson, CEM
Jard Karcher, CEM
James Kusela, CEM
Ron Lallos, CEM
Robert Lawton, CEM
Dave Lasseter, CEM
Richard Lutz, CEM
Bob Merritt, CEM
Veron Moore, CEM
Richard Mullens, CEM
Dan Pitt, CEM
Bill Prusman, CEM
Harold Reck, CEM
Marvin Rivera, CEM
John Rothweiler, CEM
James Smith, CEM
Gregory Stashuk, CEM
Robert Tonn, CEM
Nathan Watts, CEM
Roy Wodrey, CEM
Craig Wromel, CEM

2005
Laurence Gray, CEM
Steven L. Hagel, CEM
Myron Kaufert, CEM
Jason Mauney, CEM
Gary Memfield, CEM
Sandra Mesquita, CEM
James Miller, CEM
William Mueller, CEM
Bruce Perretta, CEM
Karl Quackenbush, CEM
Waren Schmidt, CEM
Earl Schreng, CEM
Stacy Smith, CEM
Angel Sosa, CEM
Philip Strahl, CEM
Dwayne B. Thomas, CEM
Phillip Wollay, CEM
Mike Young, CEM

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<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
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<tr>
<td>Total Cost</td>
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<td>2 concurrent user office system</td>
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<tr>
<td>3 day implementation planning in Houston</td>
<td>$5,100</td>
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<tr>
<td>2 concurrent user office and 3 day follow-up at your office</td>
<td>$6,600</td>
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<tr>
<td>5 foremen field systems</td>
<td>$5,500</td>
</tr>
<tr>
<td>2 day follow-up at your office (expenses included)</td>
<td>$4,400</td>
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| Total Cost                                     | $30,700 |

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The Certified Equipment Manager Institute (CEMI) takes place twice annually in conjunction with the AEMP Annual Conference in March and the AEMP Fall Symposium in October. It consists of sixteen, one-hour sessions relating to the sixteen equipment manager competencies covered extensively in the Career Equipment Fleet Manager (CEFM) manual.

Candidates for the Equipment Manager Specialist, Certified Equipment Manager, or the Certified Equipment Support Professional exams will find that the course is an excellent opportunity to study the content, ask questions of the professionals, and network with study groups prior to that register specifically for the CEM Institute.

The Institute is open to all Conference registrants to attend any of the individual sessions but the Institute materials are only available to those that register specifically for the CEM Institute. Register for the October 26-27 CEMI and/or Certification Exams at the equipment manager learning source, aemp.org
Attendees at the 28th AEMP Annual Management Conference were among the first to be introduced to the AEMP Telematics Data Standard. Since the Fall of 2007, a group of dedicated volunteers from Caterpillar, John Deere, Volvo, Komatsu, and McFadyen & Associates have been working to develop a standard format to transfer telematics data from the providers’ servers to end-users.

The standard was developed to facilitate programmatic retrieval of machine data to be fed into the end-user’s database, thus simplifying telematics implementation in mixed-fleet environments. The standard will provide cumulative operating hours, cumulative miles travelled, cumulative fuel consumed, and current location in an xml document. The recording of this information in one common format allows end-users to develop one application programming interface to parse the data and import it into their databases for use by fleet-management applications. The data retrieved from the vehicles can now be funneled once or twice a day into automatic updates on fleet-level reports. Different manufacturers’ data will coexist with that from other providers and even machines whose data is entered manually. For more detailed information, telematics providers; web portals will still provide the most detailed information.

All sides of the Equipment Triangle were excited to receive copies of the standard at the conference, recognizing that this tool will be a benefit to the industry as a whole. In fact, for the first time in association history, AEMP members voted for four manufacturers — John Deere, Caterpillar, Komatsu and Volvo — to win the Associate of the Year award, recognizing these major manufacturers coming together to produce such an important tool for the industry.

According to Executive Director Stan Orr, CAE, “AEMP is pleased to have played a key role in working with the OEMs to bring a telematic standard to the industry. Throughout the process of developing the standard, it was very apparent that the Equipment Triangle philosophy AEMP ascribes to is both relevant and needed if the evolving needs of the industry are to be met.”

Education materials and training sessions are being planned to help end-users implement the standard. Look to the fall’s Asset Management Symposium for the first round of training sessions. More information, including a blog updates, can be found at telematics-standard.org or aemp.org.
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The Construction Technology Authority
A Positive Approach to Warranties

As equipment managers negotiate these important agreements, the Equipment Triangle must come into play

By G.C. Skipper, Contributing Editor

Among the most powerful tools for minimizing equipment lifecycle costs and enhancing equipment availability are warranty and performance guarantees, according to Dick Brannigan, CEM, and equipment operations manager for John R. Jurgensen Co.

At the same time, he cautions, few management tools can be more contentious. Running a modern fleet takes more savvy and, frankly, more finesse than it used to. Some end-users still use a heavy-handed approach by swinging the repeat-business bat over the heads of equipment manufacturers or distributors. Although that can work, he says, this approach is short-sighted and can undermine relationships that should be nourished, not strained.

Done correctly, the OEM and distributor become a valuable resource for training, preventive maintenance assistance, technical analysis, and other services. The result is a relationship that helps end-users realize maximum availability while minimizing owning and operating cost.

Negotiation of warranty and performance guarantees should start with a frank discussion of the end-user’s best practices for the use, care, maintenance and repair of the equipment. Preventative maintenance has to be done on time, properly specified filters have to be used, drain intervals must be adhered to, and oil samples have to be taken at specified times and acted on, if necessary.

A complete understanding of the difference between warranty and performance guarantees can certainly help the end-user protect his investment and obtain the best possible cost recovery, according to Brannigan.

“It’s important to understand the different layers of warranty protection available today,” he says. “The basic warranty protects the end-user from costs associated with ‘defects in material and/or workmanship.’ The next layer is extended powertrain warranties providing coverage for premature failure of powertrain components. These often include engine, transmissions, final drives, hydrostatic drive components, and even hydraulic system components as outlined by the agreement.”

Warranties run the entire gamut, all the way to a predetermined total maximum cost of repair and maintenance or even total cost of ownership, Brannigan points out. Basically no different from any other risk-management tool, the cost-benefit analysis is the responsibility of the user. Typical warranty agreements exclude any guarantee of “merchantability or fitness” for any particular purpose, says Brannigan.

Unlike warranties, performance guarantees can offer the end-user measures of “merchantability or fitness” for any particular purpose. For example,
a haul truck can be guaranteed to haul "X" amount of tons/yards per hour based on some list of parameters, says Brannigan.

A good thing about performance guarantees, he points out, is that they can be designed to solve both your distribution and some key manufacturing issues that, perhaps, have been chronic problems in the past.

When it comes to preparation of bids or RFPs, Brannigan says the best approach is not to hold anything back. "You want no surprises," he says. "Everything is price-benefit analysis, so going in you have to place all your different cards on the table so the dealer or manufacturer can quote you a price."

Both warranty and performance guarantees, with a product you have historically owned, are built long term on a trial-and-failure methodology, Brannigan says. "You just keep trying to administer and forge a better relationship in terms of maintenance costs. The performance guarantees make sure you get what you pay for."

On the public sector side, Donald Rainey, mechanical engineer consultant of the equipment section, maintenance division, Virginia DOT, says when he writes a specification he spells out in as much detail as possible what specifications must be met for a specific piece of construction equipment.

"The establishment of an equipment triangle relationship with your equipment manufacturer and distributor is a lengthy and time-consuming process. It starts with a frank discussion of the end-user's best practices for the use, care, maintenance and repair of the equipment as well as your processes for ensuring that you are doing all you can to extend the life of the equipment."

"We also have verbiage in the specification to cover such things as transportation, whether you send a technician to us or whether you pick up the machine," Rainey says. "We have some caveats to cover that sort of thing mainly because of questions that have come up in the past."

Rainey says his warranty requirements are "fairly typical." As far as performance guarantees are concerned, if he's considering a wheel loader, for instance, he includes SAE data to cover such things as tipping loads. Although he rarely includes performance guarantees in his contracts, there was one exception a few years ago, Rainey says.

"In the western part of the state, we have snow blowers attached to the front of our wheel loaders. We ran into some issues where a particular brand wheel loader would not handle these snow blowers safely. I put a performance guarantee into my specifications for new equipment that the dealer had to provide us with a unit to test in the field. By doing that we could make sure the unit could handle the snow blowers."

Rainey uses many basic tools in writing his specs for RFPs, he says. They include manufacturer spec sheets. "We use these to go back and make sure there is equipment out there to meet our requirements."

Another tool he relies on is input from the field. The field people tell him how various pieces of equipment perform and if a unit, for example, doesn't have enough reach or enough power to handle the application.

A third technique that has proven valuable, he says, is the hands-on approach. Where manufacturers or dealers allow VDOT to "test drive" a certain piece of equipment. "This lets us see if the machine can do the job we need to do," he says.

Vendors who fail to live up to their warranty or what few performance guarantees are asked of them, get three opportunities to make things right, Rainey says. "It's three strikes and you're out. We have vendor complaint forms that are sent to the vendor with a 'show cause.' The vendor has 10 days to answer. If he doesn't, that's a strike."

After three such strikes the vendor can be restricted from bidding for a period of three years.

Gil Gilbert, CEM and national equipment manager for LVI Services, a demolition and abatement business, points out another consideration when it comes to writing warranty coverage and performance guarantees into a bid.

"If you are dealing with a specific equipment that the dealer had to provide us with a unit to test in the field. By doing that we could make sure the unit could handle the snow blowers."

"The establishment of an equipment triangle relationship..."
A supplier who cannot or is unwilling to meet your warranty or performance guarantee requirements, many times will write that on the bid, saying he cannot honor your requests. "Most bids say in the last paragraph that if any of the proposals can't be met, the bid is subject to being disqualified," Gilbert says. "The danger with that is you are limiting yourself to who can give you the best price, the best bang for the buck."

Several years ago, Gilbert worked for a boss who was a fanatic about using only one particular brand of machine. He wouldn't hear of anything else. Gilbert encountered another OEM's machine that he believed would do the job better. When it came to writing the contract, Gilbert worded it in such a way that enabled the competing manufacturer to come back and say, "I see what you are asking for. We can't do that, but here is what we can do." By wording the contract a particular way, Gilbert says, he opened up other options that, otherwise, wouldn't have been available.

To build good distributor/manufacturing relationships demands clear communications. "If people are communicating with each other, there is no problem that can't be solved," Gilbert says. "That said, you have to recognize you are dealing at several levels — in the beginning, the sales rep, the manufacturer's rep but when it comes time to make a deal at a level involving multi-million dollars a year, you are dealing with someone who has the authority to make changes on the spot, not go back and ask the boss if the changes are okay."

The first rule of thumb (aside from paying the distributor/manufacturer on time) is to know who you are dealing with and deal with only one person who has the authority to make decisions. Second, let them know what you want up front. "Don't beat around the bush," Gilbert says. "Also, make sure you have people in place who understand warranties/performance guarantees you sign for. Equipment managers in companies the size of LVI Services don't have time to look at every work order every day, he says. He suggested hiring a warranty administrator or someone knowledgeable on the subject, to share the performance guarantee with. Even better, that person should sit down and help write the contract from the beginning, Gilbert says.

"If you are going to take the time and make the effort to write a performance guarantee, you better make sure that the people on the line who have to implement it know exactly what you are doing and know, word for word, what it means."

Another problem equipment managers run into is that people don’t always know the terminology of warranty and performance guarantees. A good example is a policy warranty. Gilbert calls it a "good faith warranty." When a relationship between end-user, distributor and OEM is a good one, things will come up that you know are outside the parameters of your written warranty.

"Many times — as long as you don't abuse it — an OEM will agree to take care of the problem, for instance, by saying, 'Okay, here's what I'll do. I'll supply the parts and you guys put them on.'" Understanding this, Gilbert says, an equipment manager, "can really enhance his maintenance program if he has someone who is a good communicator and knows what warranty policy is all about."
Introduction to Warranties

( Editor’s Note: The following is an introduction written by Dick Brannigan, CEM, for the warranty and performance guarantee section of the Certified Equipment Manager study manual. Brannigan, who served as AEMP president from 2007 to 2008, is equipment operations manager for John R. Jurgensen Co.)

Of the sixteen study disciplines for the CEM candidate, no section is more straightforward yet potentially more contentious than warranty and performance guarantees. As a believer in our association’s Equipment Triangle, I asked to write this preface because of experience on two legs of the triangle: equipment distribution and currently as an end-user. As you read this, and obviously coming from the ranks of the end-user, I can almost hear you saying “Sure! Sure! How hard can this be: They built it, they sold it, it has a warranty and that’s that – pay up!” But hold on for one moment while I attempt to provide you with a very simple but highly effective approach to long-term sustainability in your warranty and policy negotiations.

The author of this section does an outstanding job of covering the topic at hand and provides you with a comprehensive look at a wide range of value-added propositions. The study of Warranty and Performance Guarantees provides a powerful tool for minimizing lifecycle costs and enhancing availability. The savvy end-user will certainly benefit from the application of these tools as you write your company policies and procedures for the administration of warranty and performance guarantees. What I hope to tell you in this brief preface is not discussed in the following pages on warranty and performance guarantees.

The end-user must ultimately come to the realization that fleet management is the continual application of best practices of product support from all legs of the triangle. In today’s ever more competitive business climate I cannot imagine running a modern fleet without the broad scope of product support features and benefits provided by the manufacturer and distributor. The establishment of an equipment triangle relationship with your equipment manufacturer and distributor is a lengthy and time-consuming process, but well worth the effort. It starts with a frank discussion of the end-user’s best practices for the use, care, maintenance and repair of the equipment as well as your processes for ensuring that you are doing all you can to extend the life of the equipment. Your reputation for PM compliance, scheduled oil sampling and resulting actions, work-order administration, use of properly specified filters are just a few of the many items that a manufacturer and dealer must be able to take for granted in order to begin the equipment-triangle approach.

What should follow from both the manufacturer and distributor is a host of product-support offerings as they compete for your purchasing and subsequent product support dollars. The selection and use of these offerings becomes the foundation of the equipment-triangle relationship.

Yes, I have seen the heavy-handed approach taken by some end-users and yes, the end-user can often obtain warranty or policy consideration by dangling the repeat business carrot. But in the long run, this approach is short sighted and does nothing to sustain the equipment-triangle relationship. The partnership I am trying to describe is focused on the long term and is mutually beneficial to all the participants. The manufacturer’s and dealer’s support representatives and managers are true partners with the end-user and provide continual feedback and suggestions for assisting the end-user in his fleet-management efforts. Sustained programs such as undercarriage and machine inspections, repair before failure analysis, certified powertrain rebuild programs, online parts lookup and ordering, technician response time, as well as fair and timely warranty administration are but a few of the numerous examples of this partnering approach.

Many manufacturers and distributors excel in product support, but some are locked into the old warranty as barter method. I find it interesting that the term PSR means different things to different people. Some still view their reps as Parts & Service Reps while others call them Product Support Reps. While titles don’t always define the job, it’s the differences in approach that speak volumes and generally tell me that one rep might help stock my parts shelves, but the other would strive to partner with our complete product-support efforts. As you study this section of the manual, I urge you to consider AEMP’s Equipment Triangle approach to warranty and performance guarantees.
Harnessing Information Technology

Complex sets of data can be simplified into information

By G.C. Skipper, Contributing Editor

Information technology is rising like flood water around the ankles of asset managers, and the job at hand is to harness that technology and channel it into an integrated, user-friendly system that will access data as varied as equipment health, accounting functions, and parts and service management.

Few asset managers have completed this integration. For many, it is a work in progress that has already proven its worth. Accuracy of the data is one specific benefit, eliminating human error that could easily transpose numbers, for instance. Timeliness is another benefit, which makes it much easier, for example, to pinpoint when a unit is due for PM, what repairs have to be done, and what parts are needed to do the job.

Accessing cost and operating data is simple for fleets that use only one brand of machine. But for equipment managers with a mixed fleet, it is inconvenient to go from one OEM website to another just to collect information on his machines. All that is changing this year, however, thanks to efforts by AEMP. A telematics standard was created and released in February. Eric Yeomans, manager for remote technologies, Volvo Construction Equipment, explains: “As of now our system, like other OEM systems, does not communicate directly with a customer’s management system. But by the fourth quarter of this year, we and other OEMs are setting up an API portal that customers can use to access the data and put it into their individual fleet-maintenance systems.”

“Volvo, Yeomans says, agreed to work with AEMP to reach this goal right from the beginning. “They asked for it because it doesn’t make sense for a customer to have to go to several different sites to gather his data,” he says. “They asked equipment manufacturers to come up with a common file format. Some manufacturers may have been reluctant at first, due to security issues, but now those issues have been addressed, and there’s no fear of that whatsoever.”

Although the telematics standard should make the asset manager’s life much easier, the communication system will not tell fleet managers when to replace parts in inventory. No alerts are sent out on that, Yeomans says, but reports are generated from the Volvo system website that contain information such as location of the machine, the number of machines in that area, and the hours on those machines, plus other data.

“You have to get management to buy in because of the admin resources needed and the licensing fee that is charged for each individual who is authorized to use the system.”

— Don Pleu, heavy equipment manager, Kinder Morgan

All this combined technology helps asset managers with equipment utilization as well as maintenance, Yeomans says. For example, if a machine is being underutilized at one location, the fleet manager can move it to another location where it is needed. Yet another
benefit is helping fleet managers decide when a machine should be repaired or replaced.

Mining critical data out of today’s morass of information depends most of all on system set up, according to Lorne Fleming, CEM and director of the Equipment Division of Grace Pacific Corp.

“The devil is in the details,” Fleming says. “What you have to do when the system is set up is make sure that the inventory part numbers you assign to a particular machine in a particular location get pulled out of inventory. That allows purchasing to replace the part. You take that part, which has a number on it, and assign it to a particular piece of equipment.

“You can get as complicated as you want to, but what we like to do is come up with a way to determine if the repair was due to normal wear and tear or to misadventure or misuse and abuse by others. That is the kind of detail you really have to get into,” he says.

Before you set up cost, cost codes and account codes, Fleming says, you have to pinpoint what you want out of the system and out of the entire process. Grace Pacific uses a completely integrated system called Maxwell. It uses a series of codes triggered at various operational points in the company, Fleming says. “At the end of the day — because we attack this at the beginning of the paper-work phase of it — you get everything flowing through to some particular actionable account.”

This allows Fleming to identify a specific activity, such as a repair, on a specific machine on a specific component within that machine.

For example, he can identify transmissions as a separate cost. “The technician who works on that transmission has a specific code that he puts on his time card. That code goes into the computer where the information gets sorted to the particular piece of equipment as part of our accounting system,” he says.

As Herculean as the systems integration job is, Grace Pacific has never even considered outsourcing the work. The reason is security. “If someone gets access to your management system, they can do a whole lot of damage,” he says. “Not only can they screw up your accounting system, they can look at what your costs are compared with other people’s cost, and that will have a serious impact when you go to bid a job. Because our system allows you to access equipment costs and operations costs, those numbers become critical for estimations,” he says. “It doesn’t make any sense to plug in $150 an hour cost on a unit when the real number is $250.” A fleet manager has to have that level of detail, he pointed out. “You can’t bid a job if you don’t know your costs.”

In addition to security, other reasons for setting up such systems in-house is accessibility. Fleming says he could sit at his computer at home at 10 o’clock at night and finish his costs reports because he can access the database. “I can do that, literally, anywhere on the globe,” he says. “We make a great noise in our industry about trying to figure out where we are on the standard maintenance curve, where we are in terms of costs this month versus last month versus last year. Our systems give me the ability to pull that up as a separate report.

“I don’t have to print it, but if I have to make a decision on which
piece of equipment is costing us money or if it needs repair or retirement, I have the data right there. I don’t have to go to a third party and ask for the report,” he says.

When you get right down to it, says Fleming, every fleet professional lives or dies by two ordinals. They are availability and utilization. Availability tells you how good a job your shop is doing in keeping equipment running and also how well it’s doing as far as anomalies go.

Utilization is “the cash register side,” Fleming says. “If your equipment division is set up as a profit center, then it relies on maintaining some level of equipment usage. If a piece of equipment is available 95 percent of the time, but is only used 30 percent of the time, you don’t need that piece of equipment.”

Because Grace Pacific is in Hawaii, not every OEM online system works for him, Fleming says. The larger OEMs, such as Cummins, John Deere or Caterpillar have online parts-ordering systems, for example, that Fleming uses. “For other vendors it doesn’t make sense for us to do that. We deal with the local guy and that’s generally a phone call.”

Using IT for various equipment-management functions has to be introduced into a company gradually, according to Don Pleu, heavy equipment manager for Kinder Morgan bulk terminals. Bulk terminals handle a variety of products for customers, such as coal, petroleum, scrap metal, salt, steel coils and ingots and even fertilizer and potash.

To handle bulk terminal work requires a fleet of 1,700 units that include 70-plus dozers in D9 and D10 categories, 350 wheel loaders, and about 100 material handlers, mostly excavators, plus lattice cranes, fork trucks and other units, says Pleu.

Two and a half years ago, the company did an assessment study of maintenance-management systems used at both bulk and liquid terminals. At that time, four different computer maintenance management software (CMMS) systems were used throughout the combined 180 terminals.

Today we have standardized on a single system called Dossier that has the flexibility to allow PM procedures, track fuel costs, repairs and maintenance. We are working toward our CMMS system to interface with our in-house accounting system.”

Pleu expects to reach his goal within the next few years. He had this observation about some of the challenges involved in such a project. “You know, when you get maintenance people and bean counters in the same room, they don’t speak the same language. There tends to be resistance. It’s work on our part to get (such a system) implemented.” That resistance can be caused by a number of things ranging from security concerns to “if it’s not invented here it’s no good” attitudes, he says.

As for nonstocked parts, parts availability at the OEM and franchised dealer is not integrated with the CMMS system, he says. “The heavy-equipment OEMs offer us direct entry to dedicated websites or dealer portals to obtain current equipment operating data via tele-
matics, parts books, repair manuals and in some cases, order parts directly on-line. Some of these services are subscription-based, while others are provided at no charge.”

The CMMS system has been implemented in 85 bulk terminals to date, and within two years the bulk terminals that do not have the system will have it implemented, Pleu says. Implementing the CMMS system has been a “crawl, walk, run” scenario, Pleu says. If you change the culture too fast with too much, he explained, you will run into trouble.

Of the 85 bulk terminals that have made the switch, about half of them are in the “run” stage, Pleu says. “The other half is — at least — in the walk stage.”

Another reason for the gradual approach is that the terminals are not the same size. Some have as many as 100 people working in them and others have only two or three people. “The smaller terminals are operating really lean and, since there is a fee charged to each terminal, getting the administration funds can be difficult at times,” he says.

To successfully make such a conversion requires, first of all, the commitment of top management. “You have to get management to buy in because of the admin resources needed and the licensing fee that is charged for each individual who is authorized to use the system,” he explained.

When that’s a done deal, the second step is to send a starter kit to that particular terminal to begin collecting data, such as, make, model, asset numbers of equipment, names of all technicians who are going to work on the equipment, all the parts and service vendors, and a listing of parts the terminal carries in stock for maintaining the equipment. That could include parts such as filters, belts and rollers.

After the starting data has been collected, Pleu sends a dedicated staff person who does nothing but assist the terminal to get up and running. Depending on the size of the terminal, that person could be on site for one or two days or for a week, Pleu says. “His goal is not data entry. His goal is to show them how to start entering data into Dossier. He also does training.”

By the end of this year, says Pleu, the CMMS system will generate “push reports.” Rather than actually going in and looking at the status of your PM schedule, for instance, the system will push out a report on whatever frequency you want. That report will go via e-mail into the fleet manager’s inbox telling him what unit is due for PM, what unit is past due and what is coming due.

“This gives them a better tool for evaluating their resources as well,” Pleu says.

About two years ago, AEMP created a technology task force because of the telematics systems that are installed on today’s new equipment. “The data is sitting out there, we own it and it’s paid for, so the task force’s goal was to figure out how to use that data to drive our business enterprise system or our CMMS system,” Pleu says.

As a result, AEMP has come up with a final telematics standard — announced only a few months ago — to work with OEMs. “Next year,” Pleu says, “I hope to be able to go out there and capture certain bits of information that are important to keep my CMMS system current and to drive it. To me, that would be data on engine running time, for example.”
Catching Up with CARB
Bob Merritt, CEM, and URS Corp. take strides to ensure their fleet complies—today and tomorrow

By G.C. Skipper, Contributing Editor

Not often does one state governmental body greatly impact national regulations, but when it comes to PM and NOx emissions, the California Air Resources Board (CARB) is that agency.

Although the solutions for emissions compliance have already been put in place for on-highway diesel vehicles, CARB’s attention within the past three years has been focused on off-road heavy-duty diesel vehicles. Two regulations are now included in the RFPs for new contracts that required compliance of off-road heavy-duty diesel vehicles used on such projects.

CARB emissions regulations continue to evolve, can and will change over time and location.

URS Corp. is complying with CARB emissions rules, according to Bob Merritt, CEM, director of maintenance. His company concentrates on heavy civil, engineering, government, power and contract mining work.

“Like a lot of other companies, we are continually evolving and meeting the regulatory requirements of CARB,” Merritt says. “The regulations continue to evolve, but you have to keep up. They are here to stay.”

Merritt became aware of the importance of complying with the new emissions standards, thanks in part to AEMP. As head of the association’s emissions task force, he says, “I got more involved with it and decided our company needed to take a closer look at what was coming. That’s when we started putting some things in place.”

As the process evolved, it was determined that it would not cost a lot of money to meet CARB’s initial emissions regulations. After looking into what was involved, URS decided the required work could be done within the company, thus eliminating any costs to outsource the job to specialists or pay a fee to experts. The software required to get the job done, called Doors, was supplied by CARB free of charge.

And since URS does very little retrofitting of its fleet, there would be no additional cost there other than the fleet’s replacement schedule. Administration or clerical costs to implement the regulations would be minimal.

The first thing needed was to find out where the fleet fit into the overall scheme of things. To do that, URS had to know what the fleet’s carbon emissions footprint was, a project that is ongoing today and continually evolving.

The carbon emissions footprint is based on an average of the total fleet. “It can consist of anything from a rating of Tier Zero equipment—which now is banned by CARB—all the way up to the latest configuration.” Merritt says. “They all fit into the total result. It does not require that each individual machine in the fleet be necessarily updated.”

Determining the fleet’s emissions footprint is really not a big deal. CARB does that for you, Merritt says. “Identifying the footprint is actually part of the overall program. You simply use CARB’s software, Doors and Calculator, which shows what the footprint is.”

It requires entering every piece of equipment into Doors by equipment serial number and arrangement number. Once all data input is completed, Doors does the calculation and indicates the carbon emissions footprint for either the...
entire fleet or for the equipment used on a particular jobsite.

Once it is known where the fleet fits into the overall picture and the carbon-emissions footprint has been identified, the next step is to determine how that fits into the organization’s individual business model, says Merritt.

“Take into consideration what equipment will be needed and whether that equipment should be replaced, repaired or removed,” he says. “URS has not done much retrofitting. The equipment is replaced or rented, depending on what makes economic sense.”

Paula Goodwin, operations coordinator for URS, has spearheaded the company’s compliance efforts.

“CARB gives you a password that lets you into their website,” she says. “They give you a form to fill out with your data and you submit that data to them. Once approved, CARB gives you back a number or letter that you have to post on the piece of equipment. That’s pretty much all there is to it. You collect the data, fill out the form, and send it to CARB.”

The identifying number or letter you receive back must be placed in a specific location on the machine. “CARB tells you precisely which side of the machine to place it on,” Goodwin says. The numbers or letters, which look like stickers, but are designed to withstand the harsh conditions of construction work, are white against a red background and are a minimum of 3 inches high.

Collecting the right data is the hardest part of the job, Goodwin says. She sometimes had to crawl underneath machines to find what she needed and, even then, she didn’t always know where to find the information. At that point she relied on the company’s technicians to help her round up the data.

Goodwin attended several one-day training sessions to find out what to watch out for and how to give CARB what it needed. “Each training class presented something a little different,” Goodwin says. “It scares you, but when you do it, it’s not that bad.”

From the corporate level, Merritt says, “there are some areas that were impacted sooner than others, including construction job sites. To bid on work in these impacted areas or to respond to an RFP, the equipment must meet CARB regulations, which are written right into the contract.”

If a fleet manager discovers a unit does not meet contract requirements at a specific job site, the equipment has to be moved to another location and replaced with a unit that does comply.

URS has never run into that situation with excavators, backhoes and other large construction machines. A few pieces of smaller equipment (such as air compressors) have had to be replaced due to noncompliance.

Merritt says URS might consider investing in other software available in the market rather than just using Doors. “What we want to do eventually is figure out how to collect this CARB information on our asset-management system,” he says. “That’s something we will do down the road. Now we are using spreadsheets to pull the data together.”

Until then, he will continue to scan the 20 to 30 e-mails a day he receives from CARB and EPA, retrieving and filing away only the relevant ones for later review. He also will continue to try to stay one step ahead of where CARB regulations are going to play out.
Tighter schedules, stronger competition, and demanding customers are all clawing at construction and aggregate companies’ profit lines. In the manufacturing world, continuous-improvement tools such as Six Sigma and TQM have helped companies to flourish through the harsh environment of business. Although there are numerous and obvious differences between manufacturing and construction companies, they both have processes. Whether they are formalized or controlled, every company has processes to provide services and products. These continuous-improvement systems are structured and scientific methods for improving processes.

Tools for Quality Management
Manufacturing has used these simple tools to improve quality, and equipment managers can apply them to their operations, too

By Sam Simons, director of operations for OEM Controls

A few simple TQM tools can be quickly implemented into the equipment-management system. The basic tools include flow charts, check sheets, run charts, Pareto charts, and Fishbone/cause-and-effect diagrams. Using a fictitious equipment manager, Rook E. Greenpants, let’s look at how these tools can be used.

Rook manages several hundred pieces of equipment. He has many headaches managing his equipment and his overworked mechanics and service technicians. His “gut” has served him well over the years, but he’s not sure where to start to attack his “headaches.” He will combine quality tools with his gut to focus his team’s improvement effort.

To start the process analysis, one should define the process of interest using a tool called a flow chart. A flow chart is a picture of the process that takes inputs (tools, materials, manpower, knowledge, etc.) and produces an output (products and services). There are several types of charts, but in this case we will use a Deployment Flow Chart.”

A deployment flow chart shows activities, locations and responsibilities in a process. Rook sketched a flow chart of his mobile mechanics. The responsibilities and locations are the three boxes at the top: Office, Shop and Jobsite. The shapes represent specific activities: rectangle for actions, diamond for decisions, and arrow for travel. There are many computer tools that can automate the development of this tool, but for ease and speed, he did it by hand. After reviewing the process with his team, they notice the diamond shapes, “need parts/tools” and “review paperwork.” These decision diamonds may be a cause of wasted time and effort. After a few more meetings, the team develops theories and action items to address the issues in the diamonds. The flow chart enabled them to step back from the process and improve it, which will result in a jump in productivity.
The flow chart allows a quick observation of a process, but often you need to dig deeper to fully understand what is going on in the process. Although there are many sources of data around the shop and company, such as field complaints or mechanic work order history in the corporate computer system, it is often too much and too disorganized. The question is, how does one sift through the volume and garbage data to find useful information for effective decision making?

A good option is the Check Sheet. It is used to quickly and easily collect data on key points of interest in a process. It can be a checklist, a diagram or a picture. The design of the Check Sheet should keep the data collector in mind. It should be easy to use, allow for rapid data entry, and tell what’s going at the point of activity. The faster, easier and more complete the form is, the more reliable the data will be.

Rook hasn’t been trained on the corporate computer system, so he’s going to create a check sheet for his mechanics and lube-service technicians. They are working many hours and never seem to catch up. They all have their opinions on what is stealing their time the most. He wants to learn what they are working on each shift. Here are some sample items: PM, brakes, engines and electrical.

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### Data Collection - Check Sheets

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### Common Quality Terms

- **Total Quality Management (TQM)** – A system of activities with the purpose of improving and controlling process to ensure a quality product is delivered to a customer. TQM is the system of activities directed at achieving delighted customers, empowered employees, higher revenues and lower costs.” (Quality Planning and Analysis, J.M. Juran, Frank M. Gryna, p.12).

- **ISO 9000** – A formalized system of policies, procedures and work instructions that ensures a company’s processes for providing products and services are consistently improving and controlled. Companies that are ISO 9000 certified have successfully passed an audit by an internationally approved Registrar. To maintain the status, the company is audited every year.

- **Six Sigma** – A continuous improvement system based on statistics and structured processes.

- **Lean** – A continuous-improvement system based on the Toyota Production System. One of its premises is to remove all waste from the process to provide the customer the right product, at the right quantity, at the right time. Some specific tools include the 5 S’s Visual Workplace, Standardized processes, Kaizen events, and KanBan.

### Quality Management Resources

- “Quality Planning and Analysis,” by J.M. Juran, Frank M. Gryna
- “Lean Thinking,” by James P. Womack and Daniel T. Jones
- www.asq.org
- www.pqsystems.com
After about a month of data collection, Rook enters the data into a spreadsheet program so he can analyze what is happening in the process. The two tools he will use for analysis are “Run Chart” and “Pareto Chart.”

A run chart displays data over time by a line graph. This is to analyze a process over time to see if there are any trends or patterns. It also shows whether changes positively or negatively affect a process. Run charts are common and seen in newspapers, magazines and websites; a good example is the Dow Jones Industrial average run chart. Rook reviews his data for the month of February and notices a disturbing trend. His data points are the daily counts of preventive maintenance (PM) and repair activity. The chart is showing that his repair activity is trending upward, while the PM activity is trending downward, shown by the black trend lines. He knows that in the long run this will be expensive and damaging to each project’s productivity. He now needs to determine the reasons for these trends.

A Pareto diagram, also known as the 80/20 rule, is a bar chart that shows that a few of the problems contribute the most to the total list of problems. It has a percentage line to show how each problem contributes and accumulates to the total percentage of problems. It allows a team to focus on the few most common causes of problems versus the many insignificant causes. Rook and his team note that the top four problems make up 73 percent (close enough to 80 percent) of the total problems:
- engines
- hydraulic system
- electrical system
- welding

The bars give the total number of times the mechanics performed the particular activity and correlate to the left axis. The percentage line correlates to the right axis. When the team focuses on knocking down these four issues, it will allow them to reverse the negative PM trend.
From the latest in news, trends and information affecting the management of construction equipment fleets, to information about emissions and environmental issues, Theft News, Security Product, as well as the week’s hottest new project leads, only ConstructionEquipment.com provides the information you need, as you need it.

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The next step is to identify the causes that may contribute to a problem so solutions can be implemented. A good quality tool for this is called the Cause and Effect diagram (C&E Diagram). The C&E diagram was created by Kaoru Ishikawa in 1943 and is often called a “Fishbone Diagram” because it looks like a fish skeleton when completed. It is a visual diagram that enables a person or team to develop and organize ideas for root causes of a problem.

To create a C&E diagram, place the problem statement at the head of the fish bone; in our story, the team selected engine repairs. The “fish bones” are the main categories of causes, the most common being:
- People
- Materials
- Equipment
- Tools
- Method
- Environment

Once the sheet is completed, the team brainstorms or creatively generates ideas for causes in each of the categories. The ideas are recorded around the diagram. When brainstorming is complete, the team discusses and decides on the most likely causes. The asterisks indicate that the team sees a pattern and identifies these as the primary causes.

The main cause, as determined by the team, is that they have an ineffective equipment PM system. Although they frequently perform PM services, the services are often missed or late due to manual collection of equipment hour meters. The alerts are a sticker on the machine.

Rook and his team are now focused on what to work on. They can further brainstorm solutions and try out improvements. They have the tools to either prove their improvements are effective or further analyze root causes. To prove their improvement actions are working, they can use the run charts and Pareto diagrams. Furthermore, Rook can use these tools to communicate to management their findings and progress.

Although there are many more and more sophisticated quality tools, these tools are effective and easy to implement. Flow charts enable us to see the process. Check sheets collect data on the process. Run charts tell us how we are doing in the process. Pareto diagrams show us where to focus our efforts for improvement. C&E diagrams facilitate conversations on how to fix the problems.

As we are all bogged down with the pressures of the day, these tools enable us to analyze and improve our processes so we can focus on getting the right things done, on-time, within budget for our customers.
OEM Data Delivery
Fleet Management Solutions
Fit Your Needs, Process, and Budget!

Get real time information, including:

- Machine hours
- Location
- Fuel-based maintenance
- Fuel usage
- Work hours
- Idling hours
- Mileage
- Maintenance alerts
- 4 additional input logs
  - PTO
  - Auxiliary equipment
  - Generator
  - Other

Our GPS, Radio or RFID systems capture critical jobsite data in real time, and deliver it to you via email and password-protected web reports. You get the information needed to maximize control—and profits. Information integrates seamlessly with accounting software.

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**Equipment Utilization Hours & Fuel**

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<tr>
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<th>Description</th>
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<th>Idle Time</th>
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<td>18.03</td>
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**From:** dbot@oemcontrols.com
**Sent:** Thursday, February 28, 2008 2:54 AM
**To:**
**Subject:** Service Summary DBot: Items to be Serviced

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If you own construction equipment, you know it’s only a matter of time before one of your machines blows a hose. You also know that it will probably happen at the worst possible time and in the worst possible place.

When it does happen, how quickly you get your machine back in service can mean the difference between finishing on schedule or being behind the eight ball.

Getting connected to the HOSE DOCTOR network can help reduce machine downtime and lost productivity. They provide nationwide rapid response to your jobsite with genuine Parker® products and application expertise, 24 hours a day, seven days a week.

A broken hose can cause a lot of aggravation. How much depends on who you call to fix it.

If you own construction equipment, you know it’s only a matter of time before one of your machines blows a hose. You also know that it will probably happen at the worst possible time and in the worst possible place.

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