A "bucket list" course in Pebble Beach, California, Poppy Hills was long overdue for a drainage update. After every rain, players called it "Sloppy Poppy." So golf course architects Robert Trent Jones, II and contractor Frontier Golf came in and redesigned the whole loop. In just 8 months, they replaced the irrigation system, reshaped the landscape, and sand capped the entire course. Frontier Golf relied on John Deere dozers, excavators, ATVs, and loaders. John Deere WorkSight™ remote diagnostics kept their machines in top form, while Topcon Integrated grade control sped up rough and fairway shaping. Staying on schedule was critical—tee times started filling up months before completion. But thanks to John Deere, Frontier Golf hit every green in regulation.
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The AEMP Green Fleet is not a buzz-word or a marketing trend. It wasn’t formed by bureaucrats. It was developed by emissions experts, OEM’s and your peers in the equipment industry.

By implementing the AEMP Green Fleet Recognition project your organization will realize the following benefits:

- Improved perception among the public.
- Gives your company a solid goal to attain, thus reducing the overall carbon footprint.
- Enhance your fleet’s regional reputation, brand recognition and standing as a leader within the local community.
- Allows fleets to take advantage of federal funds to relieve costs associated with reducing emissions.
- Boost employee health, morale and productivity.
How many times have you heard the phrase, “It’s all about connections”? I’ve heard it my whole life—I’ve probably even said it to my kids a few times—but never really thought about it until I was on my way back from the 32nd AEMP Management Conference and Annual Meeting, and ConExpo. While reflecting on that whirlwind of a week, it occurred to me that AEMP is a vehicle for connections.

AEMP connects not only people but machines through the AEM/AEMP Telematics Standard. AEMP has always been a place to discuss new technologies that make our operations and equipment more efficient and add to the bottom line. It gives us a platform to talk about problems and trade ideas about how to fix them. I venture to say there were several new ideas spawned by the high-quality educational sessions, which translated to changes being made once we got back from the show. I believe AEMP brings us this connectivity and creativity by keeping our members connected to information, the marketplace and to each other, whether you’re an end user, distributor or manufacturer.

Our lives are more connected than ever in the history of mankind. We’ve heard about Generation X, Y and Z, but now we hear about Generation C, the generation who cares deeply about creation, connection and community. AEMP keynote speaker Byron Reese spoke about progress and connection, how through these two interrelated things, our world as we know it is transforming into something exciting—something infinitely great and beyond our imagination.

One morning at breakfast, I sat beside a young man who had just been promoted to fleet manager of his company. He was in the process of setting up his equipment management and maintenance program and was asking questions about how to do so. He’d already had several members offer to share information on their programs and, likewise, I sent him information he could use as a baseline to get started. I felt he was a little overzealous in his thanks to me. I told him not to thank me but to thank AEMP for bringing us together so the connection could be made.

You see, connections are important by themselves, but the truth is, we don’t connect simply for the sake of connecting. We connect because it inspires us to do something, to make a difference. Data in the abstract will never inspire us the same way as the colleagues we meet. With the exciting rollout of the AEM/AEMP Telematics Standard, I hope you will use this tool to do what you’ve already had the notion to do—to connect—and, to paraphrase Mr. Reese once again, to enter a wonderful new age of human existence.

Thad Pirtle
Chairman of the Board

Thad Pirtle
The 2014 AEMP and Construction Equipment Fleet Masters Award winners, from left to right: Ron Erwin and SMSgt. Michael Montano, U.S. Air Forces Europe and Africa; Dennis Kincade, York County, Va.; and Greg Morris, CEM, Sarasota County, Fla.

Its versatility will blow your driveway...

AND MOW YOUR LAWN.
The Association of Equipment Management Professionals (AEMP), in partnership with Construction Equipment, announced the 2014 Fleet Masters awards at the AEMP annual conference in Las Vegas.

These awards are given to fleet management teams that demonstrate exceptional skill in meeting the unique challenge of fielding cost-effective mixed equipment fleets.

The fleets were chosen in three categories based on estimated replacement value (ERV). The 2014 Fleet Masters are:

- York County, Va.
  - Under $10 million ERV
- Sarasota County (Fla.) Fleet Services
  - $10 million to $100 million ERV
- U.S. Air Force Europe & Africa
  - Greater than $100 million ERV

The 2015 Fleet Masters Award is open to all construction equipment fleets. Applicants do not have to be members of AEMP, nor will they be required to become members. Winners will receive a one-year group membership in AEMP. Deadline is Dec. 15, 2014. The Fleet Masters application form can be found at: http://www.constructionequipment.com/FMAppl

Air Force Master Sgt. James C. Thomas III has shown great leadership and skill through his service to his country. For that reason, he was named the 2014 Technician of the Year by the Association of Equipment Management Professionals.

Keeping a large fleet of civilian and military vehicles maintained and ready for service is no small task. For some, this would be an insurmountable challenge in a war zone and on two separate continents—but not for Thomas.
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thinking about becoming a Certified Equipment Manager (CEM)?

There is no better way to prepare for the CEM exam than to actually take the CEM Exam. Your scores will not count toward certification and will not be shared—consider this a “sneak peak” into what you’ve been preparing for.

The field-test is open to any end user company willing to host and proctor the exam between May 12 and September 1, 2014. Each participant will receive a digital version of the Career Equipment Fleet Manager Manual, $50 off of the exam and 5 continuing education units (CEU’s). Current CEM’s will receive 10 CEU’s for taking the exam.

To learn more about this opportunity, call Sara Sanderman, VP of Education & Certification at 970-928-3405.
In 2013, Thomas was responsible for the maintenance of 970 vehicles and German Air Force assets at Holloman Air Force Base, New Mexico. This fleet consisted of on- and off-road equipment and was used in military operations over 52,000 square miles.

In the later half of 2013, Thomas was deployed to Kandahar Air Field, Afghanistan, where he held a leadership role for a vehicle repair station for NATO quick reaction forces. His team maintained a 91-per-cent in-commission rate by ensuring accessibility of critical parts and working long hours performing mission critical repairs.

Thomas received the Technician of the Year award during AEMP’s Technician of the Year luncheon, held at AEMP’s annual conference in Las Vegas.

>> 2014 AEMP Chairman Thad Pirtle (left) and AEMP Technician of the Year Award Winner Master Sgt. James C. Thomas III

AEMP Announces Honorary Life Members

AEMP announced the 2014 Honorary Life Members at the annual meeting in Las Vegas. Congratulations to these members:

- Richard Schmitt
- Phil Boyd
- James St. Pierre
- Jim W. Patterson
- Robert Andrade, CEM
- Robert Draves
- Jack Mears
- Gene Riley
- Robert Turner, CEM
- Bill Underwood, CEM
- Leo Holland
- Bruce Prentice, CEM

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- How to achieve value through technology practices
- What’s needed to bring your company to the next level
- What the AEM/AEMP Telematics Standard will do for you
- How to build the business case for telematics
- How telematics drives some of the most successful businesses in the world
- How distributors use telematics to add value for the end users
Whether you are a telematics novice, have started implementing or want to achieve the next level, the AEMP Asset Management Symposium will help you understand:

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- What’s needed to bring your company to the next level
- What the AEM/AEMP Telematics Standard will do for you
- How to build the business case for telematics
- How telematics drives some of the most successful businesses in the world
- How distributors use telematics to add value for the end users

>> Left: Rod Sutton of Construction Equipment announces winners. Right, from top: The three prestigious trophies that were given for the 2014 Fleet Masters Awards; A record-breaking number of attendees packed the room for the Fleet Masters Award Ceremony.
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Extended warranty on fleet equipment is a safety net. Without it, you run such a risk of free-falling into catastrophic failure that not even the Flying Wallendas would chance it.

Gil Gilbert, CEM, who is fleet manager of the Henkels & McCoy Pipeline Division in Pennsylvania, described extended warranties as a purchase plan that basically is available to any purchaser or fleet professional. These warranties can provide bumper-to-bumper coverage or be whittled down to coverage of specific components. Extended warranties apply to both off-road and on-highway fleet vehicles.

Such warranties are generally offered at the time of equipment purchase or, in some cases, six months before the expiration date of the original warranty.

“Fifteen years ago most components were manual, easy to rebuild and didn’t require a lot of tooling to get the job done,” Gilbert says. “There wasn’t as much electronics involved and it was fairly easy to accumulate money to implement a proactive component-replacement program over the life of the equipment.”

Those days are gone, he says. The new world of electronics and emissions control devices permeates so many equipment components, from engines to particulate filters, that it is no longer cost-effective to have in place the tooling and trained technicians to keep up with the technology.

“A good extended-warranty program—and I emphasize the word ‘good’—gives you the assurance that if you have a component failure outside the warranty guidelines the equipment is covered, parts and labor,” Gilbert says. “If you prefer, you can have the warranty cover only parts or only labor.”

For instance, if Gilbert specifies a machine, he generally checks to make sure the OEM’s extended warranty has a performance guarantee.

“Any OEM worth his salt will provide you with a performance guarantee,” he says. “There’s no one out there who knows the equipment and how it performs better than OEMs. They are going to know basic life cycles. They

Cost-effective coverage takes into account historical equipment data and an analysis of policy details

BY G.C. SKIPPER
are going to have a baseline of average component failures. When the OEM says he is going to guarantee that components will operate at this level, at that particular point and time, then you are not going to experience any premature failure that is not covered by the performance guarantee. Of course, the equipment has to be maintained as recommended and taken care of.

“Make no mistake about it,” he says, “every component in a machine is designed to fail at one time or the other. With this being said, OEMs can tell through their historical data how long a component will last.”

In deciding whether or not to purchase an extended warranty, managers must look at what they can expect from component life, have an idea of costs when it comes to rebuilding that component and do their homework, he says. Understanding the parameters of the warranty is vital.

“Most extended coverage talks about OEM defects. What OEMs don’t tell you is they are talking about the casting,” Gilbert says. “If the casting cracks, they will cover it. If the casting rusts through, that’s a maintenance issue and they won’t cover it. Most people not only buy extended coverage without knowing that, but they buy extended coverage without even knowing what’s in the package.”

The more warranty that is purchased, the more it costs. Again, managers must do the homework to evaluate the warranty’s value.

“You have to consider the possibility of raising your life cycle cost to accumulate dollars in anticipating those repairs,” Gilbert says. “You have to determine if it’s cheaper to buy extended coverage up front.”

Many managers look at extended warranties as a way to establish a fixed cost over an extended time, which makes it easier to budget. “You don’t have to use a crystal ball to guess how much money you need available to replace that equipment,” Gilbert says.

Buying an extended warranty is not without its potential pitfalls. “There are all kinds of such warranties out there, and some cover basic consumable (wear) items,” says Gilbert. “It makes absolutely no sense to buy that initial coverage because it is based on an unknown. Being consumable, it gets eaten up over time, depending on the operation, the operating conditions and on the machine operators themselves. A good operator can make a tremendous difference in the life cycle cost of that machine,” he says.

Undercarriage components on tracked equipment are one example of consumables. “The average undercarriage of a dozer [might] cost about $40,000 to $60,000 to rebuild. The rollers, bull gears and sprockets are all wear items—they all wear out as they go. If you know the average cost over a period of time, you can accumulate dollars for that. However, the variable here is where your vehicles operate. If you have a track machine working in a sandy environment and another machine working in clay conditions, the sandy application is going to wear out those components much faster than the clay application. In that scenario, an extended warranty makes sense in the sandy application.”

Another pitfall in extended warranty purchase is not knowing who the underwriter is. If dealing directly with most major OEMs, Gilbert says, chances are the coverage will be better. But, as an example, if the underwriter is an insurance company, there might not be the flexibility to exercise the policy that an OEM warranty has.

“If you don’t know who the underwriter is that’s backing up the coverage, you are dealing with an unknown,” says Gilbert.

Robert Knouse, CEM, maintenance manager for Republic Services, says an extended warranty works like an insurance policy: Coverage applies only to what is named in the extended warranty. If only the powertrain is

>> Robert Knouse, CEM, left, maintenance manager for Republic Services, and his day lead technician, Carlos Cotto, beside one of the trucks in Republic’s fleet.
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included and the door hinges on the equipment are bad, the extended warranty won’t cover the hinges.

“Make sure you read and understand the extended warranty you are buying,” he says. “A warranty should provide cost savings if you need it. They cost money, and if you’re not going to use it or don’t use them now you probably don’t want to incur that cost. But if you are aware of a problem that’s showing up after the standard warranty expires, then you may want to look at extended warranties.”

For instance, a manager might include truck frames in an extended warranty, says Knouse. If three or four vehicles have frame problems, then include that in your warranty clause. But if only one frame problem has occurred in the past 10 years, that clause probably isn’t needed. Most extended warranties only cover the powertrain unless you ask for additional coverage.

“It’s amazing that most people don’t even use the parts warranties they already have,” Knouse says. “They won’t do the little stuff, like LED lights that are warranted for three years. On standard parts warranties, you should recover anywhere from 9 to 10 percent of your total parts spend for the year, but most people don’t even do that. They don’t want to track it. If they buy the same product from six suppliers, they must track how many they purchased from each vendor or the vendor may balk if you bought three but returned 15 items for warranty. The question with any warranty becomes: Is it worth it? The cost can vary greatly with warranties, so you want to do your procurement homework so that you make sure you’re getting the best warranty for your money.”

Knouse stresses the importance of making sure maintenance is “absolutely world-class.”

“That will affect the price of the warranty,” he says. “If OEMs or dealers know you run equipment into the ground, they will take your money, but it will be easier for them to deny your claim. And the warranty will cost you more up front.”

Evaluating the value of a warranty is based on “how much you need right now,” he says.

“Experience, dealers and communications within your industry can provide valuable information on current problems fleet professionals are seeing,” he says. One natural gas engine manufacturer experienced so many problems, he says, that the company actually put questionable components that had a manufacturing defect in an extended warranty. “The cost of recalling all of the engines would have been huge compared with the price of giving an extended warranty and performing the corrections on an as-needed basis,” Knouse says. “Right now that coverage is free, but that runs out after four years.”
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TELEMATICS AND WARRANTIES

There is little doubt that telematics has had an impact on extended warranties, Knouse says. “It helps you look at the use—and abuse—of your equipment. Almost every company now has good factory-installed telematics on its equipment. For instance, if telematics shows that an operator turned off the regen of a DPF and caused an engine failure, it could result in denial of the warranty claim. But by using telematics, you can catch these problems and change the behavior of the operator before it becomes an expensive issue.”

Many fleet managers—at least in the beginning—want the technology to give them everything, says Knouse. “And they wind up getting so much information they can’t possibly process it all. They might say, ‘Send me the engine diagnostics twice a day.’ But if they have 1,000 pieces of equipment, then suddenly they are going to get hundreds of e-mails and then realize they cannot process it all.

It can get ugly really fast if you’re not careful.”

At Henkels & McCoy, Gilbert says telematics “absolutely” has an impact on extended warranties.

“Extended warranties have the same parameters that standard warranties have,” he says. “If you buy a machine, you are going to get the OEM’s basic program: location, utilization and on-off events. What they are very reluctant to let you see is major component condition and status reports. They utilize that information.”

Gilbert says if he had 1,000 hours on a fleet machine when it had a major failure, “I’m going to tell the OEM that my guys did this and that. The OEM can actually go in via telematics, look at the ECM of the engine and know exactly what was going on at the time. At that point, they have every right in the world to deny the claim—saying, for example, the machine overheated and your operator kept running it anyway.”

If the piece of equipment is something Gilbert absolutely needs, he installs his own aftermarket telematics. That way he knows if the operator is operating the machine in the proper fashion, not idling too much or overloading, he says.

“Although aftermarket telematics gives you the same information, it’s much easier for the OEM to give you full access to the data you need,” he says.

Robert Burnett, project manager, marketing service for John Deere Construction & Forestry, says telematics is revolutionizing the industry and will continue to change it.

“The real value of telematics data to the OEM is that it offers a tremendous opportunity to prevent and reduce warranty claims before failure,” Burnett says. Where the OEMs get their money’s worth is in allowing manufacturers to gather trends and data that help them build better machines, improve customer experience and avoid failures before they occur, he says.

“If a failure does happen, John Deere’s diagnostic and programming technology significantly reduces the amount of downtime and expenses incurred by downtime.”

Cost of extended warranties, he says, will vary depending on the coverage, length of the agreement and type of equipment. Deere has various types of extended warranties, says Burnett, ranging from engine-only to powertrain, powertrain plus hydraulics and full-machine extended warranties. “Also, a customer can customize the coverage type that best meets his individual needs.”

In buying extended coverage, a customer should consider not only the terms in months and years, but also the length of the agreement. Other considerations, Burnett says, are transferability and who is responsible for honoring the warranty and performing repairs.

“Most OEMs sponsor their own extended warranty programs, but third-party programs are also available,” he says. “Among the key questions an end user should ask are: Can the warranty be transferred to the next owner of the machine? Does the manufacturer back the warranty, and are repairs performed by authorized dealers with trained technicians?”

With equipment operators playing such an important role in standard and extended warranty claims, Burnett says monitoring by fleet managers can be “a very simple thing (such as) idle time. JDLink customers are often shocked at the amount of time machines spend idling. Not only is idling time wasting fuel, it is also ticking away valuable warranty hours,” Burnett says. “With all the data provided by telematics, customers can see in incredible detail, for instance, time in gear, engine load levels, tire pressure and filter soot levels. We can even track productivity by operator on some machines,” he says.

As Knouse advises, “Make sure you know what you’re getting in an extended warranty, make sure you analyze your cost and make sure it is actual value,” he says. “The definition of value is will the customer pay for it?”

“The question with any warranty becomes: Is it worth it? The cost can vary greatly... so you want to do your procurement homework so that you make sure you’re getting the best warranty for your money.” — ROBERT KNOUSE, CEM

— ROBERT KNOUSE, CEM
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Sarasota County (Fla.) Fleet Services operates a fleet of about 1,500 units, including on- and off-road equipment and light equipment such as generators. In 2007, fleet manager Greg Morris, CEM, began converting some passenger vehicles to alternative fuels. Today, Sarasota has plug-in hybrids, solar-powered units and alternative-powered machines.

Sarasota County’s efforts on the “green” front were one of the reasons Morris and his management team were named the 2014 Fleet Master in the category of $10-to-$100 million estimated replacement value. Fleet Masters are judged on five core areas: finance, information management, policies, controls and customer service. The fleet’s major accomplishments in 2013, Morris says, were the integration of hybrid bucket trucks into the fleet and the undertaking of significant improvements and additions to the fuel filtering systems at Sarasota County’s four fueling sites as well as to the fleet’s off-road auxiliary fuel service trucks.

The hybrid bucket trucks are just the latest machines added to a fleet that now includes five plug-in hybrid passenger vehicles, 33 solar-powered units and three electric and eight propane-powered forklifts. On the heavy-equipment side, 91 large-diesel assets have Tier 3 engines and 65 have Tier 4 engines.

As a member of the Florida Green Building Coalition, Sarasota County’s first objective of going green is to reduce emissions and pollutants that attack the atmosphere. At the same time, Morris says, if you don’t receive a return on the investment and save taxpayer dollars, “you probably shouldn’t be doing it.”

The new hybrid trucks already have proven themselves, he says. So far, they have significantly reduced the fossil fuel used for those assets and produced significant savings for the customer. That was possible, Morris says, because of how the hybrid trucks work.

“When a non-hybrid boom truck pulls up to the job site to replace a traffic light, for instance, the vehicle runs constantly for several hours while the work is being done,” Morris says. “During the entire time, the 8-cylinder diesel engine is running, providing power for the hydraulic system that allows the technicians to operate or move the bucket.”

When technicians go up in the boom of a hybrid truck, they still may be up there for hours, Morris says, but the difference is the truck engine does not run because the boom is battery-powered. The battery can continuously operate the hydraulic system for 45 to 55 minutes. If the battery runs low—which seldom happens, Morris says—the engine kicks in and recharges the battery in five or 10 minutes, then shuts itself off. Because the stationary truck is extremely quiet, customers and technicians who use the assets—especially those in the suburbs—have provided Morris with “very positive” feedback. “They tell me it’s a

BY G.C. SKIPPER

Greg Morris, CEM, leads the environmental efforts with hybrid bucket trucks and fuel filtering system improvements.
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huge improvement over listening to the noise of a V-8 engine running at 2 in the morning.”

The decision to invest in hybrid trucks did not come quickly, although Morris had been thinking about such a move for quite some time. He deliberately delayed his decision, keeping an eye on hybrids purchased and operated by Florida Electric Power Utility.

“We waited until the reliability of the hybrid was sufficient to give the hybrid truck a try,” Morris says.

The reliability scored high ratings, so Morris started gathering information. He talked with hybrid-truck manufacturers, evaluated what each had to offer, then based his choice on the manufacturer that promised the most profitable ROI in fossil fuel savings, he says.

The first thing he learned was just how great the demand was for such vehicles. The waiting period for one truck was about 18 months. He took delivery of the first truck in 2010 and the second truck in 2011; the third vehicle is now on order.

“The only operator complaint I’ve had is that the truck cab is hot (or cold) when they climb down from the boom and get into the cab. That’s because the cab heating and air conditioning system shuts down when the engine does.”

Also, not all of Sarasota County’s hybrids operate or drive the same. Fleet Services has several types of hybrids from plug-in to gas/electric to electric. Hybrid vehicles operate differently, which requires operators to adjust. Acceleration, for example, is quicker than operators expect and the brakes have a different feel to them.

Operators use pocket fobs instead of a key to start or turn off the engine. When an operator enters a hybrid vehicle that utilizes a fob, Morris says, the fob (which can stay inside the pocket) recognizes a signal that allows the operator to start the asset when he or she puts his foot on the brake and pushes the start button. Everything lights up, but nothing else happens.

“A lot of operators expect to hear the engine crank, but it doesn’t,” Morris says. “You simply put the gear in position and off you go down the road—in a quiet electric mode.”

The biggest operator adjustment has been turning off the engine when the asset is parked. All the lights go off, leaving the impression that the engine is also off. It isn’t. To shut down the vehicle, the operator must again put his foot on the brake and push the stop button.

“Shutting down the engine has been our greatest training challenge,” Morris says. “But it is getting much better, thanks to individuals who monitor those vehicles.”

As another effort in greening the fleet, Morris turned his attention to the fleet’s fueling stations and to service trucks that carry 100-gallon auxiliary fuel tanks. What set off the fueling system alarm was the presence of water in the filters of the fleet’s off-road equipment. That posed a serious threat to some expensive diesel engines.

“We checked our main supply tank, using both electronic monitors and ‘the tank stick,’ but found no water there,” Morris says. “We already had filters on our fuel dispensers that went from 30 to 10 microns, so we knew the fuel was well filtered when it came out of the dispenser. That meant the problem had to be with our auxiliary tanks.”

Morris’ technicians jumped on the project to remedy the problem, removed the suspect tanks, dumped the fuel and cleaned the tanks. They double-sealed tank seams and ensured everything was better than new, but they continued to find water in the equipment filters.

“The team removed the auxiliary tanks again and installed a 30-micron filter, a 10-micron filter and then another 10-micron filter,” he says. “If it fills up with water, it will slowly and eventually shut down the flow of fuel to prevent water bypassing the filters and getting to the engine. A little operator training and the filtration system solved the problem. We now have completed 18 of our 20 aux tanks.”

Introducing hybrid trucks and passenger vehicles into the Sarasota fleet definitely had an impact on safety and maintenance, Morris says. Technicians had to be trained to work on and around the high-voltage wiring in the hybrids. They also had to learn how to use special tools designed specifically for hybrid-vehicle diagnostics and repairs.

Another result of hybrid vehicles, “which utilize batteries and motors, was the extension of oil and filter change intervals,” Morris says. “Hybrids and all assigned assets are inspected every six months, and if they haven’t yet reached the OEM-recommended interval or our established 5,000- or 10,000-mile recommendation, the oil change is deferred until the next six-month inspection.”

Although the benefits of hybrid trucks are obvious, there are downsides, Morris says. First of all, they are more expensive than traditional vehicles. Second, plug-in hybrids require an infrastructure to handle charging. “You don’t just plug it into the wall,” he says. Charging stations have to be installed at the place where the vehicles are stored overnight and operators must be trained.

From the time Morris retired from the Air Force and arrived at Sarasota County in October 2005, he had a desire to reduce emissions, go green where economically feasible and create a green fleet.

“I believe in it, and I feel everyone should do their part to protect the environment and reduce our carbon footprint, vehicle emissions and fossil fuel consumption,” he says.

The Sarasota County fleet is ahead of the curve in reducing emissions and going green where it makes sense, Morris says. “Those who come behind us, hopefully, will appreciate it and breathe a little easier.”
Jeff Jacobsmeyer, product specialist with Case Construction, has viewed quality benchmarking from every point of the Equipment Triangle. He once worked at a Case dealership, owned his own business “and made a living running this stuff.” In late 2011, Jacobsmeyer returned to Case, this time on the manufacturing side. He became a product specialist in 2013.

In the days when he used to buy and operate equipment, one of the first things he noticed about a machine was its curb appeal. A good fit and finish of the product ranked high on his list, he says.

“When you walk up close to it, you can recognize good engineering,” he says. “You can see how all of it comes together to complete the unit. The machine is a reflection of the owner,” he says. “When you roll up on a job you want the machine to look good and you want to look good. To me, that’s a benchmark.”

As an equipment owner, he also paid attention to serviceability and operator ergonomics.

It is important for technicians to be able to access regular maintenance items, he says. “If your operator is going to run the equipment, it has to be ergonomically correct,” he adds. “Throttles and switches should be in an industry standard location. The operator spends a lot of time in the machine. Plenty of creature comforts is very important to a fleet owner.”

Application was yet a third criteria with Jacobsmeyer. The end user needs the machine to fit the job, but the machine still must hold its value. That allows the fleet manager to make a decision on whether to keep spending money on repairs or treat it as a “throw-away item.”

“When the machine comes out of the box—with the exception of a loose bolt here or there—it should be ready to work in the field,” he says. “And after 400 to 500 hours of operation, it should be relatively trouble-free if it’s a quality product. There shouldn’t be any component failures.

“When you buy a large excavator it should run 6,000 to 7,000 hours. But if suddenly you are replacing track motors on more than one type of brand, that’s not good. To measure deficiencies like that, you have to look at downtime failures and total cost of ownership,” he says. “Believe it or not, a fleet manager doesn’t buy this stuff just for fun. The machine has to support itself. When I owned my business, at the end of the year I would look at the income of each piece and make a decision on what I had to do: sell it or repair and keep it.”

In measuring quality in the field, he says, you rate yourself against the competition. For example, you want to make sure the machine is spec’d properly and performs with or better than the competition and that you are getting the best value for your package.
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“For instance, if it’s a 10,000-pound excavator, I want to see impressive break-out forces, good horsepower ratings—everything at or above the industry standards,” he says. “Sometimes a smaller machine can deliver more performance. That’s a big deal. You have to be a leader in your class on spec’ing when you look at equipment.”

Bruce Nelson, general manager of Komatsu America’s Chattanooga manufacturing operations, says the company has many levels of quality benchmarking before the equipment ever reaches the customer.

“As with most manufacturers, in the design phase Komatsu benchmarks itself versus our previous models and our competition,” Nelson says. “Since I am the plant manager in Chattanooga, I am more concerned about quality benchmarking against our customer expectations and against other plants in the Komatsu world that manufacture the same products. We can leverage the talents of many people across many plants to share data and work together to continuously improve our quality.”

To measure quality, Komatsu uses industry standards as well as KOMTRAX, its telematics system that not only identifies potential issues but also suggests ways that Komatsu can help customers maximize machine efficiency operation by minimizing, for instance, idle time.

Measuring quality is important because without doing it, “no one can determine if they are improving or falling behind,” Nelson says.

“Understanding where you are makes it much easier to see where you want to go. We can never sit back and rest on past achievements.”

When internal issues or parts-supplier issues arise, the goal is to keep customer fleets up and running and minimize any impact on the customer’s operation, Nelson says.

“The key to addressing shortcomings is to find the root cause as soon as possible,” he says. “To do that, we use all groups working together to develop a solution that addresses the needs of the customer.”

Andy Benko, quality director for John Deere Construction & Forestry, defined quality benchmarking as “a process of comparing OEM solutions, products, services and processes against competitors and leading organizations.”

“The benchmarking process [at Deere] provides insights that guide how we define its quality metrics and goals in targeted segments around the world to satisfy customer and business needs as we align to our company strategy.”

Quality benchmarking can be measured on four levels, he says: designed-in quality, delivered quality, quality over time and performance quality over life cycle. This is measured by
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the number of failures per unit, total returns and allowance costs, policy costs and by using B20, which is a measure of component durability performance time from the initial few hours of operation and quality experience from the customer’s perspective.

Benko says deficiencies are measured, analyzed and reviewed in any one of these categories through the use of statistical tools and, if needed, appropriate action is taken to close whatever gaps surface.

Measuring deficiencies is imperative, Benko says, “to define critical quality metrics, to set goals, to validate measurement systems and to quantify current and forecasted performance, all of which ensures we are making progress toward our goals and quantifying shortcomings for potential action.”

Thad Pirtle, this year’s AEMP chairman, says his company, Taylor Bros., first established a benchmarking program in 2008. That program and measuring its quality is similar to—and just as important as—an insurance program.

Mickey Hammers, equipment coordinator at Taylor Bros., bears the responsibility for overseeing benchmarking efforts across the company fleet of more than 3,000 units.

Obviously, Hammers says, you must establish a baseline to understand if you are improving or not. That baseline at Taylor is anchored by historical data. The benchmarking system is also used to compare against its dealers, he says.

In general, Taylor inspects the equipment upon arrival and departure from the yards, jobs, dealers and/or other storage areas. The inspections are reviewed and deficiencies recorded.

“We track the number of deficiencies, major and minor, as a percentage compared with the number of equipment transfers for a given year,” Hammers says. “The goal is to have 100 percent of the equipment ready to go to work upon arriving at the job, which correlates to 0 percent deficiencies.”

Major deficiencies are those that are safety-related or cause the equipment to not be work-ready. Typical major issues are missing safety guards, decals, structural damage or if equipment will not start. Minor deficiencies are those that are not going to keep the equipment from working but need attention when available. Typical issues could be, for instance, poor sheet metal, faded paint or a damp hydraulic hose.

“If a crane arrives at a job site and the inbound inspection finds a damaged boom lattice, the crane is red-tagged to indicate out of service,” Hammers explains in another example. “The job site equipment superintendent is notified, and the major deficiency is researched to find out when and where the damage occurred. Once repairs are complete and inspected, the machine is put back into service. The deficiency is recorded in a deficiency log for review.

Having good communication is key in obtaining accurate information to understand the root of the problem.”

Minor deficiencies are more ambiguous at times but are still considered a deficiency. “That counts against our goal of 0 percent deficiencies,” Hammers says.

When it comes to measuring quality benchmarking, Taylor looks at its percentages compared with past years, its goals and its dealers, he says.

“We knew from the beginning that we had to get better,” Hammers says. “We wanted to set a standard for us as well as help the dealers understand what is acceptable within the industry. If a piece of equipment is sent to a job, it should be ready to go to work.”

He says Taylor is running at less than 1 percent deficiencies, “but we understand that even at this percentage field repairs can be costly.”

The importance of quality benchmarking is proven time and again by an old adage, Hammers says: “Time is money.” If a machine is sent out not ready for work, that costs you time and money.

“We are here to support our jobs, and our goal is to be a leader in the industry on supplying ready-to-work equipment.”

In fact, benchmarking is so important at Taylor that it recently started a new process of conducting field audits.

“A lot of our equipment will go to a job site for three to five years,” Hammers says. “What we have found is that some jobs are better than others on maintaining equipment. By implementing on-site field audits every three or four months, we can establish an acceptable benchmark on the maintenance performed and bring awareness to project management. It’s much easier to address less costly repairs during the job versus very costly repairs at the end of the job.

“By adding the field audits, we establish quality benchmarking with job site maintenance, just as we have done in other areas. All of this ensures that ready-to-work equipment is available,” he says.

When it comes to benchmarking, whether for end users benchmarking themselves or dealers, or for a dealer or manufacturer benchmarking against competitive brands, the key word that should run throughout the process is quality. EM
A
ter every CONEXPO-CON/
AGG, we walk away energized,
excited and inspired by the
new equipment and technologies that
are pushing this industry forward. 2014
was no exception, especially with all the
buzz around the AEM/AEMP
Telematics Standard.

Hundreds of people attended educa-
tional sessions and press conferences and
visited AEMP’s booth hungry for more
information about the future of this
expanded standard and what it means for
their operations and the industry as a whole.

In order to triangulate the best answers
and insights on the details and impacts
the Standard will have on the industry,
we assembled a panel of industry insiders
to discuss these issues from their own
vantage points.

On this panel, we have with us:
• Dan Samford, vice president,
equipment department of Herzog
Companies Inc.
• Nick Bollweg, engineering manager,
WorkSight Solutions of John Deere
• Al Cervero, vice president, construc-
tion sector of AEM
• Stan Orr, CAE, president and CSO
of AEMP
• Christopher Seelan, president &
CEO of GenesisCircle

The revised Standard has been
described by many as similar to
software development. Will this
be a competing piece of software
with proprietary OEM solutions
and other third-party telematics
software providers in the industry?

Stan: No. The
Standard is an
Application
Programming
Interface (API)
that essentially
translates the lan-
guage coming
from OEMs and
third parties into
a common language, allowing a fleet
manager to track his fleet information
from a single location instead of multiple
OEM platforms.

Nick: This is one of the key misconcep-
tions about the Standard we have been
hearing more and more. The Standard
does not, in itself, outline a marketable
piece of software. Like Stan said, it out-
lines an API for sharing data. An API is
a software-to-software interface, not a
user interface.

So, the Standard outlines merely an
agreed format to share an agreed list of
data to enable different pieces of software to communicate more efficiently. APIs are very common in the industry today and used in solutions like the online banking website and app Mint—a program that allows you to import data from various banks and credit cards so you can see all your financial information in one place.

Are the data from individual fleets aggregated by AEM or AEMP across competing OEMs or fleets?

Al: That is a question that we tackled from the very beginning. The answer is no. Neither contractors nor OEMs have any interest in data aggregation. In fact, data security by both contractors and OEMs has been a major point of discussion.

All agree that the data are intended for improving efficiency of the contractor on the job site and for supporting and improving products by OEMs for the contractor’s benefit. No aggregation is even being considered. Just the opposite—rules and governance are being set in place to avoid the very thought of it.

Stan: Aggregation was an issue that was addressed early on in our efforts with AEM to expand the Standard from the initial six data points.

OEMs and fleet owners alike have real concerns about aggregation across multiple fleets. Any equipment owner can and should compare its own fleet data, but when it expands to aggregation across multiple fleets you have potential competitive issues for both fleet owners and OEMs that make aggregation unlikely.

Is one of the goals of the Standard uniformity of data categories and fault codes, and how is that information stored with AEM or AEMP?

Nick: The Standard does not standardize fault codes—it only defines the format of how to communicate fault codes from the telematics provider to other software. There is no standardization of text, numbers or types of fault codes between providers defined in the Standard.

This is an important fact for everyone in the industry to remember as it illustrates that this initiative defines the format of the data, thus neither AEM nor AEMP will be storing any fleet data.

In order to not delay the release of the Standard, our team agreed to only focus on a common format for sharing the data that’s already captured and sent today to each individual telematics provider’s website.

Al: That is an important point. Neither AEM nor AEMP will store any data. In fact, there is no process or discussion of storing the data with the associations.

How can OEMs and third-party telematics software providers access the AEM/AEMP Telematics Standard?

Stan: A beta will soon be released. Any OEM or third party wishing to receive the beta can register to receive it at AEMP.org. AEMP and AEM, as representatives of the wishes of their members, want to know who is downloading and potentially using the Standard when it “goes live” in late 2014.

We want to make sure whoever claims to adhere to the Standard does so correctly and that is why we will be instituting a certification program this year. The intent is to protect the end user, and we want fleet owners to have confidence in telematics as a solution to managing their fleet.

“The Standard does not standardize fault codes—it only defines the format of how to communicate fault codes from the telematics provider to other software.”
— NICK BOLLWEG
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How will participating OEM solutions and third-party telematics software providers be able to have their telematics solutions accredited as AEM/AEMP Telematics Standard Certified?

Al: There is strong interest in having OEM and third-party software providers go through a certification process or test. Even end users with their own business enterprise software will want to test their operation. This is also going to be reviewed by a joint certification committee and ultimately approved by the governance group of end users and OEMs.

Chris: It is the strong interest by OEMs and third-party software providers that is driving the need for this technical certification process our team is creating.

The technical side of the certification process is an online validator. It will read the response data for the demo fleet provided by the customer. It will check each node in the response data elements to verify conformance with the Standard.

Participating OEM solutions and third-party telematics software providers that wish to participate in the AEM/AEMP Telematics Standard Certification program will sign up on AEMP’s portal for the certification process. This process will begin with the registering user accepting the terms and conditions for the certification program.

The providers will then submit their end point and credentials to a demo fleet. The certification process will validate the data provided by the demo fleet. It will inspect the required fields in the data feed and look for conformance to the Standard. This will include testing the recommended authentication mechanism. The results of the tests will provide the end certification.

On data elements that pass the conformance test, it will be marked as a ‘Pass.’ On data elements that are optional and where a value has not been provided by any equipment in the demo fleet, the result will be marked as a ‘Warning.’ On data elements that do not pass the test due to nonconformance of the data or meta information, they will be marked as ‘Fail’ with the corresponding reason. These tests will be performed quarterly to ensure continued conformance with the Standard by the provider.

As this standard gains momentum and industry support, why is it important for end users to be familiar with the value of the Standard as they talk with OEMs, distributors and other product reps?

Dan: I personally believe continued buy-in and participation by ALL stakeholders in the industry is critical to maximize the ROI potential and benefits. With the current push in telematics, many contractors have made initial investments in third-party telematics providers that may or may not speak the Standard.

To progress beyond that initial investment, it has to integrate with a management system that shows benefits across the board regardless of who the provider is to capture the benefits that telematics provide.

Nick: I would add that the goal for this effort is to increase the adoption and usage of telematics. There are still misconceptions about what this standard is, which may cause an end user to not ask about it or leverage it. Participation by ALL stakeholders in the industry will help with the education and awareness level of what the Standard is and what it isn’t.

“It is the strong interest by OEMs and third-party software providers that is driving the need for this technical certification process our team is creating.”

— CHRISTOPHER SEELAN
The Standard is not a cure-all. There are still data available from the providers that are not in the Standard. So, it’s important for end users to understand what this Standard really is, how it can be used and how it could fit into their overall fleet-management processes.

From a manufacturer’s/distributor’s point of view, why is this Standard important to meeting the needs of current and future customers?

Nick: Telematics data have been proven valuable in a number of applications such as improving customers’ fleet-management capabilities, providing dealers new product support tools and enabling OEMs to design better products based on real field data. OEMs have made the commitment to offer telematics as standard equipment on many construction machines in order to enable and promote that value.

However, we know most contractors have many brands of machines and we know that one of the biggest customer hurdles to adoption of telematics is the end user needing to access data from multiple places. So there is a large percentage of machines that have telematics installed but they are not really being utilized.

With this new standard, manufacturers are agreeing to provide an expanded set of critical machine parameters that customers can feed into their central business system through an API. This enables customers to see all their assets in one place with a standard set of data while also maintaining the ability to go to their telematics provider’s individual sites when needed to “drill deeper” into rich machine data.

What is AEM’s commitment to this Standard as the representative industry organization of the OEMs, many of whom are developing their own telematics solutions?

Al: AEM’s commitment could not be stronger. Our CE Sector Board created a telematics task force to set AEM’s direction on this project, understand customer needs and obtain member consensus.

The task force has met several times over the past year, and its technical subcommittee met frequently over the past six months in order to achieve consensus and operational capabilities by CONEXPO-CON/AGG 2014. The CE Sector Board and the AEM board of directors to which it reports are continually updated by the task force. So this is as strong of a commitment as AEM can make.

Furthermore, AEM’s leadership is updated regularly on the progress of our telematics task force and is supportive of its work. When AEM supports a product or a process by board vote, it is making a statement on behalf of its 900-plus member companies. However, each member company will need to determine its own technical capability and feasibility depending upon the product and customer needs.

Does AEMP provide membership opportunities for OEMs, distributors and product/service manufacturers in order to get plugged into the most current information and committees who are working on the AEM/AEMP Telematics Standard?

Stan: Currently AEMP has a technology committee that is working closely with AEM. Since AEMP is an education-based organization, this key committee, made up of fleet managers, also focuses on telematics education needs.

That education is delivered at conferences and online at AEMP University. Anyone in the Equipment Triangle can gain valuable insight into the wants, needs and expectations of a fleet manager as well as actively contribute to the conversation that is currently going on in the world of telematics, standards and the Internet of Things.

Editor’s Note: Questions about the Standard can be directed to Stan Orr, CAE, president and CSO of AEMP at 970.928.3402, stan@aemp.org. Updates to the Standard can be found at http://www.aemp.org
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