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HERE’S A QUESTION: IF EVERYBODY HAD AN OFFICE JOB, WHO WOULD BUILD THE OFFICES?

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MANAGEMENT
17 Field Technician Training
Equipment managers keep field technicians on top of their game in order to keep far-flung fleets running

TELEMATICS
23 Cutting Through The Noise
Telematics provides enough data to overload a manager. Learn what to use and what to ignore

BEST PRACTICES
28 Benchmarked To Succeed
Incoming president Dave Gorski honed his management skills through years of serving and learning with AEMP

MAINTENANCE
30 OSHA’s New Crane Standard
New federal rule has implications for crane maintenance, inspection

DEPARTMENTS
7 The Chairman’s Corner
8 AEMP News
  >> 2011-2012 AEMP Board of Directors
  >> 2010 Credentials Awarded
  >> Austin Bridge & Road Receives First AEMP Green Fleet Certification
  >> AEMP Recognizes Key Members
  >> AEMP Foundation Recognizes 2011 National Technicians of the Year
  >> 2011 Fleet Masters Award Winners Recognized

Cover Photo: Lauren Sutton
The new **Tier 4 engines** from Komatsu are designed and built by the experts who have set the standard for dependability, long life, low operating costs and fuel efficiency.

<table>
<thead>
<tr>
<th>Dependability</th>
<th>• Hardware and control systems designed and built by Komatsu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator Ease</td>
<td>• Diesel Particulate Filter regenerates automatically with no action required by the operator</td>
</tr>
<tr>
<td>High Performance</td>
<td>• Engine acceleration is noticeably faster due to Komatsu Variable Geometry Turbocharger</td>
</tr>
<tr>
<td></td>
<td>• Automatic emission controls maintain same performance levels during regeneration</td>
</tr>
<tr>
<td>Robust controls</td>
<td>• Hydraulic actuators provide trouble-free precise control of Exhaust Gas Recirculation and Komatsu Variable Geometry Turbocharger</td>
</tr>
<tr>
<td>Low Maintenance Costs</td>
<td>• Identical drain intervals</td>
</tr>
<tr>
<td></td>
<td>• Only two new maintenance items: Closed Crankcase Ventilation and Komatsu Diesel Particulate Filter</td>
</tr>
</tbody>
</table>

[www.komatsuamerica.com](http://www.komatsuamerica.com)
As I sit back and reflect on a week in Las Vegas with AEMP’s 29th Management Conference & Meetings and CONEXPO-CON/AGG right on our heels, all I can say is … WOW. From attending the educational sessions, walking from exhibit to exhibit at CONEXPO, to visiting with industry professionals at the AEMP booth, it was truly an awesome week.

If you went to this CONEXPO-CON/AGG show solely to look at new products, I don’t believe five days was enough time to see it all. From earthmoving equipment to the software that runs, tracks and syncs it all together, the innovation at the show was more overwhelming than I have seen in some time. For those of you who want more details on a machine, missed seeing something or didn’t make the show, you can visit the official news site for CONEXPO-CON/AGG at http://conexpo-conagg-2011.dailynews-online.com.

The AEMP 29th Annual Conference was entitled “Rethinking Asset Management.” After seeing this show, the name was fitting. Everyone in this industry needs to keep their running shoes close.

I feel truly humbled not only to work with the individuals that make AEMP the organization that it is, but to follow the previous leaders is even more humbling. Now that I have taken over as chairman for Daryl Crear, I see more than ever what tremendous accomplishments this organization has made.

Over this last year alone, AEMP:
- Created an updated version of the Telematics Standard
- Continued development of the new AEMP website
- Developed, field tested and launched the CESP (Certified Equipment Support Professional) exam and credential
- Launched the AEMP University (aempu.org)
- Offered the EMS exam online
- Grew the AEMP Green Fleet Certification program
- Created a Task Force to tackle the AEMP’s next big issue—safety

All of these initiatives happen because of a network of dedicated individuals and members. I would like to thank these folks, the board, committee members and everyone that attended this conference for your time and efforts. I would also like to give a standing ovation to AEMP staff for a Rocky-like performance in keeping everything going behind the scenes at both our conference and CONEXPO-CON/AGG.

It’s an exciting time to be involved in this industry and especially this association. All of us involved with AEMP are lacing up our running shoes.

Dave Gorski, CEM
Chairman of the Board and CEO

Confidence is going after Moby Dick in a rowboat and taking the tartar sauce with you. —Zig Ziglar
2011 Asset Management Symposium & Professional Development Institute
November 1-3, 2011
Nashville, TN

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- Green Fleet Action
- Driving Down Emissions
- Practical Fleet Integration of Telematics
- Managing a Fleet with Life Cycle Analysis
- Managing the Load/Haul process to increase profit
- Leveraging Partner Agreements
- Managing Employees During a Ramp-Up
- HAZMAT Handling
- Safety Tracking
- What’s Up with Crane & Derrick Rules?
- Best Practices for Repair/Replace Decisions
- Training and certification for the CEM, EMS and CESP at the Professional Development Institute

When Does Yellow Turn Green?

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The Professional Development Institute takes place twice annually in conjunction with the AEMP Annual Conference in March and the AEMP Fall Symposium in November. It consists of seventeen, one hour sessions relating to the seventeen 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 any of the three exams.

The Institute is open to all Symposium registrants to attend any of the individual sessions but the Institute materials are only available to those that register specifically for the Professional Development Institute.

The upcoming exam will be held Friday, November 4th. Register for the November 2-3 Professional Development Institute and/or Certification Exams at aemp.org
2010 CREDENTIALS AWARDED

On March 21, 2011, 11 Certified Equipment Managers (CEM) and four Equipment Manager Specialists (EMS) from the class of 2010 received their pins and due acknowledgment at the AEMP awards luncheon. Gary Beerbower, Carter Dicken, David Heredia, Doug King, Jr., Dennis Morrison, Mike Richardson, Thad Rodgers and Brett Todd all received their CEM pins during the awards luncheon. 2010 CEMs Cory Clary, Joseph Martin and Todd Whitehead were unable to attend the pinning ceremony.

Also recognized at the ceremony were the 2010 EMS recipients. Harold Romberg, Darren Thompson, Steven Weaver and Joshua Dickman are now proud to hold the EMS credential. To date, more than 200 professionals have received credentials through AEMP. For the complete list of CEMs and EMSs, go to www.aemp.org/certified.html.

Austin Bridge & Road Receives First AEMP Green Fleet Certification

Austin Bridge & Road has been awarded AEMP’s first Green Fleet Certification. In demonstrating its commitment to a cleaner environment, ABR showed 88 percent of its off-road fleet met a condition of being Tier 2 or better, qualifying the company for Bronze Certification, the first level in the four-tiered Green Fleet Certification program.

Equipment director Mike Munson says the certification carries several benefits, but most important to him is the chance for the company to stand out to customers in its design-build and federal pursuits.

“We also want to highlight the benefits of our youthful fleet,” Munson says. “Our fleet averages just over five years for more than 500 pieces of equipment.”

Munson received the certification on behalf of his entire team and plans to keep up efforts in the program, with the next goal to be achieving Silver Certification.

The Green Fleet Certification Initiative is an industry-wide program created by AEMP in an effort to increase public awareness of the industry’s efforts in the way of environmental care. The program also serves to educate, incentivize and recognize individual fleets for their efforts.

“Equipment managers and their fleets are facing an atmosphere with ever-increasing and ever-changing emissions requirements, and fleets often aren’t recognized for the progress they’ve made over the decade,” says Stan Orr, CAE, AEMP president and CEO.

Four defined levels of certification are offered in the program, which Orr says is meant to challenge, yet realistically allow all fleets to achieve a level of Green Fleet status, regardless of size or funding.

Orr also points out the need to change the public’s inaccurate image of fleets as a primary cause of air pollution as another primary focus of the initiative.

“Fleets are viewed by the public, often unfairly, as the leading contributors to greenhouse gas emissions,” he says. “AEMP is looking to bring a more favorable, accurate impression of heavy equipment fleets to the public.” Orr strongly feels a big step in achieving this goal is creating awareness and doing so by commending those fleets and fleet managers who actively pursue a greener fleet.

Beyond achieving recognition, voluntary green fleet investment allows fleets to take advantage of federal funds to relieve costs associated with reducing emissions. Green Fleet status also gives participating companies a competitive edge in the industry. Across the country, green products and services are in high demand, and those who have achieved Green Fleet status will have a distinct advantage over competitors.

“We feel achieving Green Fleet certification benefits the fleet in several ways, not just the prestige and recognition,” Orr says. “It’s our belief that it also will give them a competitive advantage in situations like bidding a job. Mr. Munson further reinforced this idea, that Green Fleet status is a notable accolade and an impressive one to tout.”
AEMP Recognizes Key Members

The Member of the Year Award is given in recognition of an individual’s outstanding service to the AEMP through active participation and contribution of new ideas, practices or innovation in maintenance or management of heavy duty equipment. No better choice, then, for the 2011 Member of the Year than Pat Crail, CEM. Crail, from John R. Jurgensen, served tirelessly on the Telematics Committee and was critical in bringing the telematics standard initiative into fruition. He also serves on the Board of Directors.

The Associate of the Year Award is presented annually to the associate member or company that through past efforts has significantly enhanced or promoted AEMP. Castrol was selected for its herculean efforts in assisting AEMP with the initial build out of the association’s new website and AEMPU. In addition, Castrol is commended for its help in providing quality speakers at the conferences.

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. Diego Navarro, from John Deere Construction and Forestry, was the top choice for the 2011 award. Navarro has shown a staggering amount of support for AEMP. Navarro is a familiar and much respected presenter at AEMP conferences. Additionally, Navarro is credited with playing a major role in not only the development but the actual writing of the new customer service section for the career equipment fleet manager. With his help, AEMP was able to unveil the Customer Service session, the newest core competency to be added to the Professional Development Institute.

>> From top: Pat Crail, CEM, Member of the Year. Castrol, Associate of the Year. Diego Navarro, Richard Hawkins Award.
Since 1989, the AEMP Foundation has recognized the finest technicians in the industry. In early January, a panel of judges reviewed over 40 Technician of the Year applications from all over the country.

Through the National Technician of the Year award, the AEMP Foundation advances the technician vocation and positively impacts the career growth of those who win. The National Technician of the Year Award is given in recognition of clearly demonstrated professionalism, technical skills, innovative troubleshooting and diagnostic capabilities, as well as exceptional contributions made to the equipment technician profession.

Though many worthy applications were reviewed, the panel narrowed down the applicants to one winner from the public sector and one winner from the private sector.

The 2011 AEMP Foundation private-sector Technician of the Year is Tom Hellmers with Murphy Tractor and Equipment in Omaha, Neb. Hellmers has been in the profession for 48 years. He is skilled and intuitive with technology from many different makes, models and lines of equipment and has earned certificates through many different OEM’s, totaling well over sixty certificates in all.

Hellmers services a large portion of northeast and eastern Nebraska. Over the past few decades, he has
developed excellent customer relations with the state, county, city and private fleet managers. Through these relationships, he has created very strong customer loyalty not only to Murphy Tractor but also to his reputation as an excellent technician and individual. Whether it is a large rock quarry or a single machine operation, there are very few entities in Nebraska that he has not influenced with his skills. Hellmers is in such high demand, customers will call and schedule him for repairs – willing to wait until he is available to do the repairs.

Hellmers has proven himself as a highly technical and innovative technician. On several occasions, he has designed and built tools that have helped improve the repair process. One example of his ingenuity came when he was working on an International 3400 series tractor. International was having issues with a particular style of transmission slipping out of gear and damaging the gears. Hellmers designed a solution by cutting a groove on the shaft and installing a heavy duty snap ring to hold the gear in place. An engineer from International came to see Hellmer’s solution and developed a product update for the transmission patterned after what he had done.

“Bottom line: Tom is a service manager’s perfect technician,” says Robert Swangel, service manager at Murphy Tractor.

The 2011 public sector Technician of the Year Award recipient is Ron Bradly with the Sarasota County Fleet Services Department, based in Sarasota, Fla. Bradly has been with Sarasota Fleet Services for more than 30 years. He holds the desirable position of a heavy truck/equipment technician II, a position that represents the most elite technicians.

Bradly currently holds 6 Master Mechanic ASE certificates. There are very few technicians in the world that can claim this honor. Additionally, he holds 2 EVT certificates.

Bradly clearly demonstrates a commitment to education and higher learning—a passion that he shares among his coworkers and next generation of technicians. Bradly is always taking time to help train and guide other technicians in the Fleet. In fact, he developed and presented a course titled “Introduction to Automotive Systems” for Venice Florida High School students in a joint venture with the Sarasota Vocational Institute.

Bradly has taken on the role as lead technician at his repair location. The experience and knowledge that he has acquired with his employment at Sarasota has provided him with the ability to accomplish his tasks unlike any other. Personnel and asset reductions prompted him to step up efficiency and timeliness, thus saving Fleet Services thousands of dollars.

Fleet manager Greg Morris, CEM, says that in his 30 years of experience, “Ron’s technical abilities are the best that I have ever seen.”

An award ceremony was held for Hellmers and Bradly at the Las Vegas Hilton on March 15, 2011. The winning technicians received a prestigious award plaque and personalized Technician of the Year jackets. In addition, each Technician of the Year will receive a custom, full-sized John Deere tool cabinet and a $500 scholarship for continuing education.
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With technology leaping forward in ever bigger strides, asset managers have their hands full just keeping shop technicians up to speed and up to an even higher level of performance quality.

The challenge becomes even greater when fleet managers and owners have field technicians strategically placed at different job sites, not only across the United States, but globally. One such company is Bechtel Equipment Operations, and one worldwide fleet service manager is Bechtel’s Kenneth G. Burke. Bechtel is one of the largest engineering and construction companies in the world, and the number of technicians can run from five to 20 on a jobsite, depending on the country and the region.

Bechtel typically determines that number by reviewing the fleet size and then deciding how many technician, service and shop personnel are required to maintain the fleet in that particular location, Burke says. Due to the structure of the company, formalized classroom training is difficult.

A core of senior technicians is deployed to a given project as required to help in both recruiting and updating technician skills. “We are not like your normal construction company that has one location, and everything comes back to the same shop,” he says. “We nevertheless train our guys by utilizing OEM training programs.”

On the recruiting phase of a project, for example, technicians are initially hired using an interview process to ensure that a certain level of competency “is coming through the gate,” Burke says. As equipment arrives at the location, OEM representatives are brought in to train technicians specifically on their equipment, including everything from...
troubleshooting to normal maintenance requirements.

Senior technicians are required to go through 80 hours of training each year on a number of levels, such as OEM training and inspector training. All of it is designed to build their skill levels to help with their jobs, Burke says.

This type of intensive, ongoing education is necessary to keep up with rapid technological advances in such areas as computer controls, specifically ECMs, or electronic control modules.

“You no longer can have a shade-tree mechanic who jumps the points and gets the equipment going,” Burke says. “So in our interview process, we look for technicians who have a clear understanding of electronics versus mechanics. For the most part, the mechanical aspect of equipment is very sound and very reliable. Where we get into issues are with controls; for instance, signals from the joystick to a specific function. If you get water intrusion and things start to go a little wacky, the most important thing in my opinion is the technician’s comfort level in this area and his understanding of electronics.”

In addition, Burke says, his technicians go through courses on how to read both North American and European schematics, “because we have a large number of both in our fleet.” That type of training, he says, comes from OEMs.

“One of the first things I did when I took this position three years ago was to hire a lead training manager who had been the North American lead training manager for a major crane company,” Burke says. “I piggy-backed off what he had been doing.”

Similar to most fleets, Bechtel uses online training to teach basics in such areas as hydraulics, electrical training and mechanical training. Once a technician has gone through those programs, Burke sends him out internationally “to help our guys in the field.”

Senior technicians move into more complex, if not to say, exotic training areas. They learn to build and program robots, called “boe-bots” internally, “utilizing the methodology outlined in the Stamps in Class Program,” Burke says. The Stamps in Class is a trademark program of Parallax, Inc. that is designed to be applicable to a wide range of students. The series of programs is used in technology and pre-engineering programs in high schools, colleges and universities, according to Burke.

“The technician trains at his own pace, and what it does is teach him how to write codes for computer programming that makes the boe-bot perform various functions. This drives home the concept on how milliamps of electronic signals cause a piece of equipment to work.”

This depth of training helps technicians better understand the step-by-step process of eliminating problems and “gets their thinking set up to paint one room at a time rather than painting the whole house. It makes them better at troubleshooting,” Burke says. “It’s like splitting wood. We start with one block at a time, eliminate one, then another, and before long the job is done.

“Since we provide our guys with everything from screw-drivers to cranes, once they get their head around such things as schematic reading, computer programming and troubleshooting, they are very comfortable with tackling a 600-pound crane that is controlled by a computer.”

One of Burke’s goals is to make everything automatic. For instance, service trucks that go around to different job-sites have devices that not only tell Burke where the driver is going but also where the equipment is. The device pulls data from the equipment and uploads it into the company’s maintenance system. “We pull idle, hours, location and run logs as we drive around,” he says.

Burke is also working to customize Bechtel’s maintenance software “so that it will be an add-on for the guys to have handheld devices.” One such device now used at the Bechtel facility in Houston is a Trimble pen that has a scanner on the end and physically writes like a pen.

“Customer service is huge. You have to have people out there with a good attitude, urgency and a willingness to work out in the cold and heat 24/7, if necessary.”

—TODD PERRINE, CEM, LESLIE EQUIPMENT
“When the technician writes out a work order, the add-on software recognizes dots and turns the dots into type script. We just plug the pen into our USB and pull the work order into our system,” he says.

To make sure field technicians are adequately trained, Burke, working with Bechtel’s training department, has created a career path similar to Canadian Block 1, Block 2, Block 3 development, he says. The Canadian system is a structured approach for mechanics “to work through their apprenticeship,” Burke says. Block 1 requires nine months of school and three months of work experience; Block 2, six months of school and six months of work; Block 3 requires three months of school and nine months of field work.

“When a mechanic reaches Block 4, he has worked as a mechanic for a year,” Burke says. “At that stage, he takes an exam and is considered a journeyman.”

Technicians work their way up through the system and the amount and type of training follows that.

“We have such a variety of equipment—sump pumps, small engines, electric shredders, dump trucks, earthmoving gear—that we can’t tie technicians into any one manufacturer,” Burke says.

To monitor the quality of work done by field technicians, Burke uses PEMS (project equipment management system). As equipment comes off a job or moves into a job, it enters into a repair shop where incoming and outgoing inspections are done. With certain equipment, such as cranes, sometimes a third-party inspector is brought in “to have another set of eyes review the work,” Burke says. In addition, an audit team visits the jobsites to review paperwork, look at the appearance of equipment and see how the shop is set up.

Leslie Equipment Company, a John Deere dealership with 10 branches that serve West Virginia, southern Ohio and eastern Kentucky, has about 25 field technicians and 75 shop technicians. The number of technicians depends on the location. Some facilities have two and others have up to six technicians, according to Todd Perrine, CEM, who is Leslie’s vice president of product support. Leslie operates 23 service trucks and three lube trucks, Perrine says.

“Each facility is a stand-alone operation,” he says. “As a Deere dealership that also carries other lines, we work out of nine shop locations with nine service managers who supervise the shop and field technicians.”

The Leslie shops handle troubleshooting, equipment maintenance and repairs ranging from replacing a mirror component to catastrophic engine failures. “Equipment is brought into the shop that is closest to the jobsite. The facilities are between 75 and 100 miles from each other, although some are 50 miles apart,” Perrine says.

Usually, technicians employed by the company come from tech schools, Perrine says, and are required to take some preliminary testing before getting hired. They work in the summer and work their way up through the ranks, going from level one to level two. When they reach level three, they go into Capstone training, Perrine says.

“They go to our training center located in Cross Lanes, W. Va., which holds about 65 people. The Capstone training classes are conducted by two other Leslie technicians who have been trained by John Deere and are the company’s specialists.”

Classes take place over a period of three to five days and cover electrical and hydraulics, plus hands-on training of different lines of loaders, trucks, excavators, crawler dozers, motor graders and backhoes.

“Once they do online training for all this, the next step is for them to be the instructors for these courses,” Perrine says.

Perrine says that each time Leslie orders a new model change of equipment, they are notified by John Deere that the company has from the order date to the delivery date to have two parts department people, two salesmen and two technicians trained on the specific new model. “You have to have all these things in place before another machine is ordered,” he says.

Capstone graduates are sent back to the shops to assist and mentor newer technicians who are coming up through the ranks. “That’s how they get their training to be potential field guys down the road,” he says.

A big part of working in the field is safety, and Leslie’s safety program is “rigid,” Perrine says.

“We do a lot more work on mine property and natural gas sites than ever before in West Virginia,” he says.

“Before technicians go on site to perform work, they must be certified in other areas, among them coal miner training, MSHA and site-specific training.” Technicians are required to wear reflective gear on their hard hats, fire retardant coveralls with reflective striping as well as appropriate boots and gloves.

To ensure quality of the field work, data is collected from John Deere technicians all over the country that measures how long a particular repair takes—putting on a set of tracks, for instance. That information goes into a database and is averaged out among all the Deere dealerships.

“That gives us a fair labor rate to quote the customer,” Perrine says. “If
someone calls and says his hydraulic pumps are out, we can tell him the labor cost, mileage and the amount of time the repairs take. The customer knows pretty well what it’s going to cost before we come out.”

The biggest challenge in training field technicians is customer service, Perrine says.

“It’s huge. You have to have people out there with a good attitude, urgency and a willingness to work out in the cold and heat 24/7, if necessary.”

Indiana-based Taylor Bros. combines mentoring, in-field training and OEM training in a formalized program, according to Thad Pirtle, Taylor’s vice president of equipment. The company has a total of about 60-plus technicians, who are split into two groups: corporate and project level operations.

“We have four corporate field technicians and two apprentices who report to the shop manager and also to a corporate superintendent. There are four service trucks in that operation,” Pirtle says.

The second group is made up of field technicians who work on a project level and report directly to the equipment superintendent on the project. About 20 technicians and between 10 and 12 service trucks work at the project level, he says.

The training process requires newcomers to spend time with experienced technicians in first-day training. In the field, Pirtle says, “we use mentoring as well as working with people in the shop.”

Newly hired technicians also must wear red hats for 90 days. “The caps allow us to see where they are on the shop floor, for instance,” Pirtle says. “We have a buddy system in the shop, and that lets us see who is working together. Also, if we see four or five red hats working together with no white hat, we can address the situation. And, too, other workers can see the red hats, know where they are working and, if necessary, can help them out.”

Taylor Bros. uses GPS to track equipment, “but not so much technicians,” says Pirtle. “Technicians are dispatched to a project for a two- or three-week period, and they may not be entered at the same locale. We don’t see any advantages in tracking technicians at this time,” he says.

All field technicians are armed with laptops, and their itineraries, time cards and expenses are electronically transferred on a weekly basis, Pirtle says.

Field work quality is monitored by direct feedback. When technicians arrive at a jobsite, the project manager or superintendent tells them what they are required to do. Technicians are given a service report that they are expected to fill out and keep. The reports provide project managers with up-to-date information on technicians’ work and, if the manager is happy, he signs off on the report. Also, the project manager follows up to make certain someone isn’t struggling with a problem.

In fact, Pirtle says, technicians are required to take third-party communication training. Usually, that training lasts for one or two days and covers basic communication skills, including how you speak to someone, what to do, and what not to do. “It’s a good refresher course even for our more-skilled people,” Pirtle says.

Companies invest time and money in training technicians to do quality work efficiently and productively. The one issue they continually face is retaining the technicians they have invested in.

“Money and benefits do talk, but I think the best way to keep technicians is to challenge them and offer them training to meet that challenge,” Pirtle says. “Those are the two biggest things. The type of work we do is part of challenging our technicians. It is exciting, big work that is enjoyable. And we offer the training and education on which they can successfully build their careers.”

Leslie Equipment Company runs a corporate training center where it conducts hands-on training for technicians in John Deere equipment.
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For many fleet professionals, telematics is like living under a waterfall. The enormous flow of information and data is overwhelming at times, leaving them awash in the very technology designed to make fleet life more efficient.

The reason, according to Pat Crail, CEM and fleet information manager at John R. Jurgensen Companies, is their inability to cut through the noise.

“Way too often,” he says, “I see people take polar approaches to telematics. They hear about all the things a telematics system can provide and are so wowed by all this noise—and it is noise, not information—they run around trying to find a way to use all that data, which, in many cases, is meaningless.”

That’s not to say telematics doesn’t have the ability to expand the metrics you use, Crail says. The key is to consider telematics as another data delivery stream; certainly a much improved one but a data stream nevertheless. “In and of itself, telematics is not a panacea,” he says.

What makes the technology manageable is advanced planning and, in simplest terms, knowing what you need to know.

“If you have the foundation in place, such as the appropriate reports to let you know that you are meeting your performance metrics or falling short somewhere, and if you have all that well defined in advance, then you are in a much better position to choose an appropriate telematics strategy for your fleet,” Crail says.

Fleet managers, he says, should ask themselves what plan is going to provide them with the best data to give them timely and accurate reports to use in managing their fleets. Managers must start with a solid base of good business practices, plus the reports needed to support them, before they set out to find a telematics system that helps run a fleet more efficiently, more effectively and more profitably. “Then,” Crail says, “take advantage of it.”
As early as six years ago, Crail’s company tried telematics technology on a small scale, he says. Using a third-party supplier, they outfitted some on-road materials hauling equipment and some milling machines in an attempt to maximize their route productivity.

“It was a good concept, and it worked well—when it was working,” he recalls. “Back then, we had issues with the reliability of the device supplied by the third party. At times, the device would stop communicating. To get it going again, we would have to actually visit the machine and do a manual reset. The problem was that we were using the technology primarily for its GPS capability to pinpoint the location of the equipment. When we couldn’t find it, the supplier couldn’t tell us where the machine was either. We not only couldn’t find the off-road machine, but the device wasn’t durable or hardened enough to operate in a hostile environment.”

The device worked better with on-road vehicles, Crail says. If there were a problem, he could simply call the driver and ask where he was.

Daniel Samford, vice president of equipment for Herzog Contracting Corp., says telematics helps him manage an extensive fleet. The highly diversified company reaches into numerous transportation-related industries: construction; mass transit; maintenance and operation; railroad construction and maintenance; asphalt plants throughout the United States, the Caribbean and Brazil; and global sanitary landfills in such far-flung locations as Guam.

“Telematics ties into all this,” says Samford. “When people look at telematics initially, they hit only the high spots. They don’t really realize the return on investment until they actually get immersed in it and actually start using it.”

When that happens, asset managers begin to see telematic applications they never thought of before, Samford says. For example, Herzog uses the technology for equipment utilization, to work with fuel tax reporting and project management, to name a few.

“Telematics presents a true third-party look at things that help document a position,” Samford says. “It’s easy to say telematics is going to provide utilization reports, but it also lets you look at machine preference choices, for example. If you have a machine that is always preferred over another, why is that? If you have one Brand X and two Brand Ys, why is Brand Y always being used and Brand X is not?” With telematics, he says, it can help evaluate if there is a mechanical issue, a spec issue or if preference is due to the ergonomics of the machine.

Telematics also enhances communication with machine operators.

“Our operators call in when they see any engine light come on,” Samford says. “We are able to go online and tell them through our system why the engine light is on and whether or not it is something that needs immediate attention or something that can wait until it is convenient to bring the vehicle into the shop.

“Telematics is an amazing tool,” he says. “We give our banks access to our telematics, for example. They rarely use it, but once a year when we submit our inventory to our financial institutions for our corporate line of credit, they feel comfortable knowing that it’s there.”

Herzog’s insurance companies have access to it as well, Samford says, and have waived the fleet’s $10,000 deductible. “If you take a few things like that and you get deductible waivers, it all pays for some units pretty quickly,” he says.

Herzog also archives its data for more than two years to give the company access if, for whatever reason, the information is needed.

Sam Simons, director of business development for OEM Controls, defines telematics as “machine data that is transmitted back to management.”

“Management needs the data to help them monitor their fleet and control costs, a common business process in all industries,” Simons says. “Construction companies today are implementing high-end software programs as well to help them run their businesses. They have a few more challenges when they implement this software to help them manage their biggest asset and cost category: equipment.”

Construction companies have projects throughout the world and don’t have eyes on all their assets, Simons says, so one of the main benefits of telematics “is to give fleet managers an unbiased view of their equipment and see what’s going on with the process.”

Fleet managers implement software programs, yet they have people in the field collecting data by paper, Simons says. “They expect these people, who normally are mechanics, fuel technicians or operators, to focus now on clerical duties,” he says. “That’s not their expertise. And because they have to do clerical work, the productivity of the fleet suffers and the data that does come in is usually horrible. You can’t read the writing, wrong data is written down or it suffers and the data that does come in is usually horrible.”

And when all that data hits the office, Simons says, the paper work gets lost in somebody’s in-box or office personnel can’t read the writing or numbers are transposed. “All these things cause poor data. Once you start getting poor data flowing into your accounting software, people don’t trust the system,” Simons says.

As a result, management must spend time confirming the data and re-entering the proper values. People have to go out to verify the hour meter readings and determine what’s really going on with the equipment.

“The checking and reworking data is pure waste,” Simons says. “Companies spend millions of dollars, and
they can’t use their software programs because the data is so bad. Telematics eliminates all that.”

However, the data can overwhelm managers if they don’t know what to do with it. Simons splits managers into two categories. One is the fleet manager who wants to know when every alert goes off on the equipment and wants the equipment to tell him when it is feeling sick.

“When someone says that, alarms go off in my head,” Simons says. “For one thing, it tells me they don’t have a preventive maintenance (PM) program in place. They are waiting for a breakdown to manage their fleet. They are reactive rather than proactive. The second thing it tells me is they don’t realize what data they need. A fleet manager is very busy and doesn’t have time to look at many reports to manage their fleet. Often, they are understaffed and under-skilled at using the computer. What often happens is the manager’s in-box gets filled up with so many reports it becomes wallpaper. They don’t pay any attention to it or have time to.”

The second type of manager determines the key pieces of data needed to help manage the fleet.

“Everybody will tell you the three key pieces are hours, fuel and location,” Simons says. “If you get hours you should be able to manage your fleet proactively. They base their PM on hours, PM 1 service (changing the oil and filters) can be done at 250 hours. PM 2 service, which is more elaborate, can be done at 500 hours; and at 1,000 hours, even more intense PM can be done.

“If you do this consistently, you don’t need to know when the engine is overheating because you are monitoring the equipment to keep it from ever reaching the point where it overheats. You aren’t letting it go to a catastrophic failure.”

Because fleet managers are so busy, telematics systems such as OEM Controls’ tell them when maintenance services are due, feed hour meter readings into their management software to generate work orders and help them keep an eye on their equipment, Simons says.

Telematics can increase fleet availability. If a machine is in the field and hasn’t been talked to, or hasn’t called in, the fleet manager knows the unit is sitting idle.

“You need to identify where it is,” Simons says. “As you collect the hour meters wirelessly, you can see that the machine that should have been working 40 hours a week only worked 10 hours. Maybe that unit needs to be moved to another jobsite or maybe you need to get rid of it.”

OEMs and dealers can help determine the right amount and type of data that is beneficial to the customer and when that data needs to be delivered.

Nick Redd, program manager at Caterpillar, defines telematics as the integration of information and communication technologies.

“That’s really the core of telematics,” he says. “In heavy equipment and related industries, it is an enabler to fleet-management processes that improve efficiency, productivity and reduce overall owning and operating cost. Telematics gathers the data from the machine and takes advantage of communication technology to transmit it to fleet-management systems that turn the data into information.”

Key benefits for the fleet manager, Redd says, include monitoring the health of the machine; quick identification of a machine’s performance; and providing clues for other service issues, such as identifying a small problem before it becomes a catastrophic failure.

“Even if you have a well maintained, well oiled machine it can still develop problems due to harsh operations,” Redd says. For example, telematics can let a fleet manager know if an operator is abusing shifts on a machine and thus needs additional training. The same thing is true for identifying site issues.

“If you have data coming in that tells you events are occurring in a particular area of the jobsite, it may indicate that you have a grade that is too steep, causing the engine to over-speed. The operator may be speeding that engine every time he goes down a grade. That lets you get back in and grade that to a proper level.”

Another big advantage is increasing overall operator efficiency by monitoring how much time the unit is idling or working based on its fuel consumption.
“If a large number of units are idling more than they should be, you may see an opportunity to move those machines to another work site or maybe it’s a production problem,” Redd says. “For example, if an excavator is loading haul trucks and you notice the trucks have too much idle time, it could be that the trucks are waiting too long to be loaded due to too many haul trucks or not enough excavators.”

On the maintenance planning side, telematics cuts down dramatically the lag time between the point when operator hours are reported at the end of a week and are transmitted to the back office where a manual process is used to determine service intervals.

“Telematics goes through those processes automatically on a daily basis in real time, so you know how far you are from the next service interval,” Redd says. If a manager knows a PM is coming due, he can schedule it around the production schedule.

“You have to filter it down in a way that suits your operation,” he says. “You have to identify the information that’s most important and get it to the right people. That’s how you get the most out of this technology.”

In some cases, the right person may be the dealer. That allows the fleet manager to focus on his day-to-day responsibilities and the dealer to monitor the machines.

“We’ve had cases where a dealer received an alert and called his customer. The customer shut down the machine and saved a pretty significant repair bill,” Redd says.

Managers can also use telematics to track rental equipment, especially if the machines have telematics installed. The renter can use that information to assure the equipment is being operated under the conditions of the contract terms while the customer can show the machine was used as intended.

Simons says that the responsibility for telematics on rented machines depends on how the rental contract is negotiated.

“With long-term agreements, the rental company may say the renter has the responsibility and that if the equipment comes back all beat up, the renter is responsible,” he says. “The challenge for the renter comes if he rents many pieces of equipment from different vendors. That equipment must be taken under the renter’s control in order to manage it.”

Crail notes other variables. “It depends on the rental company, the contract, the terms of the rental,” he says. “In one case, we rented an excavator for two months. We rented it through a local dealer for that brand. By having a quick conversation with the dealer, we were able to get them to add that machine to our fleet; that is, give us access to the data coming from that machine by adding it to our fleet of registered vehicles. We had 20 machines of that brand, so they moved the machine over to our fleet temporarily.”

Generally speaking, Crail says, it’s probably not practical for short-term rentals.

Although telematics can be a tremendous management tool, Crail warns against automated alerts, suggesting that many fleet managers fail to realize that when the technology sends out an alert, it simply means the computer on the machine saw something it didn’t like.

“Certainly it doesn’t indicate that any repair is needed,” he says. “That fault code comes to the customer instantly, the customer thinks there must be a problem because he received the message, they call their dealer and try to get something done about it, or they invest their time in researching it or by sending a mechanic out there only to learn it wasn’t anything that serious.”

Crail says at one point, he had 2,700 fault messages over three years from a population of about 25 like-branded machines. He wound up talking to the dealer and learned that none of the 2,700 alerts was a problem.

Crail admits fleet managers can’t ignore all alerts and if something does catch their attention, it warrants a phone call out to the jobsite if nothing else.

“Chances are all sorts of bells and lights are going off in the cab, and the operator has already shut the machine down because he knew about the problem before you did.”

When it comes to telematics, Crail says, many fleet managers “trip and fall down. That’s why they have to learn to cut through the noise.” EM
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Benchmarked to Succeed

Incoming president Dave Gorski honed his management skills through years of serving and learning with AEMP

BY G. C. SKIPPER, CONTRIBUTING EDITOR

At a young age, Dave Gorski, CEM, learned that a job isn’t finished until it’s done correctly. The son of an ex-military man (Navy), he also learned to cross his t’s and dot his i’s. That discipline was further instilled all the while Gorski worked for the family business, which was established in 1915 and still operates today.

“A small percentage of my 40 years of working life has been controlled by a clock,” he says, “Mostly you were taught that the work finished when it is completed successfully.”

That self-discipline stayed with Gorski, shop administrator for Illinois-based K-Five Construction Corp., after he made the transition from family business into the construction industry in 1993. Originally started as a residential paving company, K-Five is one of the largest paving contractors in the state. One of the first things he wanted to find out, he says, was where he stood as an industry newcomer, not only to compete in the field but also to know how to strengthen his knowledge and managerial skills to leverage them into a position of industry leadership.

“It’s akin to playing basketball,” he says, “You go out in the backyard and shoot hoops all night, and you constantly swish the net. But when you play somebody one-on-one, now you have a whole new perspective of your skills. I was already doing basic business fundamentals, such as equipment cost analysis and crunching all kinds of numbers, but I reached a point when I said, ‘Okay, I’m doing this, but how good am I and where are my numbers coming from and is there anything else I should be using?’ And I wanted to know what the best in the industry were doing.”
That’s when Gorski decided to benchmark himself. He wanted to find out how well he was doing his job and by whose standards. “You get to the point where you start setting your own standards,” he says. “And, fortunately or unfortunately, you start to raise the bar.”

To start the process, he began to look into different associations across the country to evaluate what they offered. He eventually became a member of what was known at that time as the Equipment Maintenance Council (EMC). EMC, of course, eventually became AEMP.

“I started getting out and talking to people, especially AEMP members, and discovered a whole world of other ideas,” Gorski says. “For myself, I believe the association’s conferences are world-class education year in and year out. By attending the two- or three-day sessions, you become aware of different track levels for networking. For me, it stimulates better ideas.”

Like many other equipment professionals, Gorski had a tendency to focus closely on administrative details and what was going on at the various jobsites. He became totally immersed in the daily routine: putting out fires and dealing with constant interruptions. “You start to lose sight of the big picture,” he says. The broader view became clearer after joining AEMP.

“When you attend a conference, you start to get involved. You attend the executive track levels or you get on a panel or you become a speaker on a certain program. All this involvement refreshes you with a wealth of knowledge learned from the people you are with. You find out just how much you don’t know.”

And get involved is what Gorski did. He has served on the education committee and emissions task force, and on the Board of Directors as director of construction and as vice president. He also has participated on numerous conference speaking panels.

That involvement and self-benchmarking led him to AEMP’s 16 core competencies. Asked what two or three had the most impact on his job, Gorski answers, “I can’t pick a particular one. Right now, I’m using all the core competencies in everything we do. In Chicago, during the winter time, we slow down and revisit almost every one of them. When it comes to core competencies, we are hitting on all 16—or more—cylinders.”

This association experience isn’t just an exercise in business philosophy or esoteric managerial techniques. His AEMP membership, he says, ties directly back into his job and gives him the background, education and tools he needs to do that job better.

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He uses most of them every day, Gorski said, “because they are so intertwined that it’s hard not to. For example, a parts manager comes in to discuss a defective part. That leads into a discussion of warranty issues and to discuss warranties you have to know something about negotiations. “You can’t practice shop and facilities management or walk through your shop without thinking of safety. Sometimes that safety leads into human resources, because if you see someone repeatedly doing something unsafe, you have to address this immediately.”

On top of all that, he notes, companies are being bombarded from all sides by environmental issues. “I can’t put a value on any single core competency because they all are so important,” Gorski says.

But if he is pressed into an answer, he will tell you that, day in and day out, the three he “leans on” and uses the most are safety, preventive maintenance and employee training. “Then, I try to tie it all together with financial management,” he says.

This association experience isn’t just an exercise in business philosophy or esoteric managerial techniques. His AEMP membership, he says, ties directly back into his job and gives him the background, education and tools he needs to do that job better.

“Some of the subjects that hit close to home for me—especially today—are discussions, updates and learning about the experience of others who have dealt with the Environmental Protection Agency and where it is trying to go. Those are some of the most recent challenges we as fleet professionals have to face,” he says.

True to his upbringing and his experience working for his father, it’s not surprising that Gorski views his career path as being similar to a military model: “Be all that you can be.” In striving to reach that goal, it was only natural for him to go after and obtain his Certified Equipment Manager credentials.

“Like the 16 core competencies, getting a CEM is just another step to see what areas you’re good in and identify the areas where you can improve. It brings everything to fruition—what I’ve got to do and what I’ve got to have to totally do the job that my position calls for. All of it gives me the knowledge and training in what I do for my employer, K-Five Construction.”

Gorski set out to benchmark himself to improve his managerial skills, which he has done. As for his leadership accomplishments: Gorski is the in-coming president of AEMP.

“That in itself speaks volumes. EM
by Matthew Shaw

By now, just about everyone in the equipment management industry is aware of sweeping new rules regarding cranes and derricks used in construction. Borne out of the Cranes and Derricks Negotiated Rulemaking Advisory Committee (C-DAC), the new rule, 29 CFR 1926 Subpart CC, affects just about every part of the lifting industry in some manner. The result of more than 10 years of work, this new rule was published in August 2010. Most of its provisions, including much of the inspection, maintenance and training requirements, became effective on November 8, 2010.

The rule covers all “power-operated equipment, when used in construction, that can hoist, lower and horizontally move a suspended load.” This includes all types of mobile, tower and overhead cranes, including mobile gantry cranes; articulating/knuckle boom cranes when used in certain applications; and less-conventional machines, such as pipelayers or sideboom cranes. Generally speaking, if equipment is used in construction and is specifically designed to hoist and move a suspended load, it likely falls within the scope of 1926 Subpart CC.

Although operator certification is certainly one of the most widely talked about parts of the new federal rule, the new requirements for inspections and maintenance are just as vital and important to examine. Equipment managers should be keenly aware of these changes and how they affect their fleets, personnel and operations. The intention of this article is to take an overall look at parts of Subpart CC, including the inspection, maintenance and training requirements.

We’ll also be looking at the valuable information contained within the preamble of the published federal rule, which provides great insight into C-DAC and OSHA’s intentions with these new regulations.

Additionally, there are a couple of personnel qualification terms defined by OSHA’s new rule that will be of
INSPECTIONS

Although OSHA has clearly detailed the specific types of inspections, this article also seeks to break down the types into basic groups, based upon the reason for inspection. It should also be noted that several types of cranes, including tower and barge-mounted cranes, as well as derricks, have their own supplemental inspection criteria.

Equipment change inspections are based upon some sort of change in the physical status of the equipment. There are four different types of equipment change inspections: modified equipment, repaired/adjusted equipment, post-assembly and pre-erection. The latter (pre-erection inspection) is specific only to tower cranes. All four types of inspections must be performed by a qualified individual, and none of these inspections require documentation to be maintained.

A modified equipment inspection is required by OSHA to assist in the determination that the modifications to the equipment have been in accordance with the requirements set in OSHA 1926.1434. This inspection includes functional testing of the equipment as a whole. OSHA was concerned that it's possible for modifications to have an adverse affect on the entire piece of equipment and sees full operational testing as a means to help ensure it is safe to operate (Preamble pp. 47968).

The repaired/adjusted equipment inspection is intended to show that the equipment has been repaired according to the manufacturer or qualified person's recommendations and restored to original design specifications. This inspection requires functional testing of all components that were or could have been affected by the repairs. OSHA hopes that this type of inspection, along with monthly inspections, will be sufficient in indentifying deficient repairs or adjustments (Preamble pp 47968).

A post-assembly inspection is performed after completion of assembly. OSHA's intention here is to assure that the equipment has been configured according to manufacturer's specifications. Like the previous equipment change inspections, OSHA requires a qualified person to perform the post assembly inspection.

Specifically regarding tower cranes, the agency wants each component inspected prior to erection. This pre-erection inspection is designed to help identify defects that would be hard to detect after the tower crane had been erected or hard to find during a normal shift inspection. OSHA feels that the individual performing the inspection would have to make determinations on deficiencies similar
to those found during an annual/comprehensive inspection. Therefore, the rule requires the same level of knowledge and expertise of the qualified person performing the pre-erection inspection.

In the case of the modified and repaired equipment inspections, as well as the post-assembly inspection, OSHA mandates that the equipment must not be used until those aforementioned inspections have been performed and shown that the equipment meets the manufacturer’s and/or OSHA’s requirements. In some cases where the manufacturer’s specifications are unavailable, perhaps because of the company no longer being in business, OSHA does allow qualified registered professional engineers (RPEs) to develop the criteria and procedures for repair, adjustment or assembly. Whether or not an RPE is necessary must be determined by a qualified person [1926.1412(b) & (c)].

Regular interval inspections are performed on a regular basis.

Shift and monthly inspections differ from those previously mentioned because they must be performed by a competent person. OSHA noted in the preamble that it generally expects this person to be the operator of the equipment. However, by requiring a competent person to perform the inspection, OSHA allows the employer flexibility to choose someone other than the operator to perform the inspection. In fact, in cases where the operator is not a competent person in respect to inspections, the employer must use someone else who is competent.

The primary differences between the shift and monthly inspections are the documentation requirements. Shift inspections require no documentation, while monthly inspections do. These monthly inspection records must be kept by the employer for not less than three months. The primary purposes of these requirements are to help identify and track developing deficiencies, so that others who use the equipment can assess the previous inspection results.

The annual/comprehensive inspection must be conducted every 12 months by a qualified person and must be documented by the employer who performs the inspection. Documentation for this particular inspection must be kept for at least 12 months.

In the previous construction standard, OSHA 1926.550, a competent person was required to perform annual inspections. The new requirement for a qualified person versus a competent one was a conscious choice on the part of C-DAC and OSHA. They felt that the higher level of expertise was necessary because of the more thorough nature of this particular inspection. OSHA intends for the annual/comprehensive inspection to be able to identify those deficiencies that would not be normally caught by the shift and monthly inspections (Preamble pp.47972).

Service type inspections are performed due to extraordinary circumstances.

OSHA requires severe service inspections to be performed when there is a likelihood that damage or excessive wear, caused by extreme situations such as shock loading or exceeding the rated capacity, may have occurred. In these cases, a qualified person must inspect the equipment, identify any deficiencies and determine if the crane is able to safely continue operating under severe conditions.

When a particular piece of equipment has been out of service for three months or longer, OSHA felt that certain deficiencies could occur that could be dangerous if undetected prior to use. It requires that the equipment be inspected prior to initial use, following the same criteria of the monthly inspection. The only exception is that it must be performed by a qualified person. The agency felt that some defects or deficiencies caused by extended idle periods might only be

>>> The newly published OSHA 1926 Subpart CC brings many changes and new requirements for inspection, maintenance and repair personnel.
detected by the qualified person’s higher level of expertise (Preamble pp. 47972).

PERSONNEL
Because inspection, maintenance and repair personnel can still encounter the same crane-related dangers faced by those working on a jobsite, OSHA has also sought to provide some requirements for these types of personnel. During its meetings, C-DAC recognized that maintenance and repair personnel have to run the crane periodically. It also acknowledged that the operations performed for maintenance and repair are not as extensive as for general construction operations.

OSHA ultimately decided not to require maintenance and repair personnel to be certified/qualified in the same manner as is required for crane operators. However, the OSHA rule does specify that the maintenance/repair personnel are only allowed to perform operations necessary for inspection, maintenance and/or repair. OSHA specifically states in the preamble that it does not permit these personnel to run the equipment for regular operations, unless they meet the operator qualification requirements in 1926.1427. Additionally, when these personnel do have to run the equipment, OSHA requires them to be familiar with the operations, limits, characteristics and hazards associated with the specific types of equipment. If they are not, then they must be under the direct supervision of an operator who does meet the qualification requirements.

The qualifications of maintenance and repair personnel are also briefly addressed by OSHA in 1926.1429(b), which states that they “must meet the definition of a qualified person with respect to the equipment and maintenance/repair tasks performed.”

TRAINING
Managers should also be aware that the changes to the federal regulations will also require additional training for their personnel. OSHA addresses this in 1926.1430 and specifies that employers are required to provide training for each competent and qualified person in the requirements of Subpart CC. This training must also be provided at no cost to the employee.

OSHA also wants each employee that requires training under 1926 Subpart CC to be evaluated in some manner. This does not necessarily mean formalized testing, though that would likely meet the agency’s requirements. Instead, OSHA has left the language flexible for everyone but crane operators and signal persons. For those two types of personnel, the agency is very clear on the testing requirements.

OSHA seems to indicate that the intention of this part of the new rule is to confirm that the training has been effective and that the personnel understand the material they’ve been taught. Based upon the preamble, OSHA also suggests that it doesn’t want “self-evaluations,” that is, an individual judging themselves to have been trained effectively (Preamble pp. 48034).

THE BENEFITS
Although these changes are an extensive overhaul of previous regulations, they are also, in many ways, common sense solutions to existing problems. It is hoped that the end result of the implementation of these new regulations will be a reduction in crane-related accidents. With an estimate of 175 injuries and 22 fatalities that can be prevented annually, OSHA clearly believes this can be the case.

>> Matthew Shaw is regulatory compliance coordinator for the National Commission for the Certification of Crane Operators.
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