An Expedition to the Mountain’s Peak

By Marilyn Rawlings, CEM, 2006-2007 National President

Greetings from the warm and sunny state of Florida, the location of our next annual AEMP conference, to be held March 5-7 in Jacksonville. The Board of Directors and the association staff have worked hard to make this year’s program the best to date. We are excited about sharing our vision for the organization and all that we hope to accomplish during the next year. We have a lot of work that needs to be completed and many mountains to climb, and we cannot do it alone.

My brother is a mountain climber. No, not a professional, he has never even come close to Mount Everest. He has conquered eight 14,000-foot peaks in Colorado and for fun climbs 65-foot sport walls in the Midwest. Through climbing he has taught me a few things.

First, climbing a mountain takes a long time. It’s a step-by-step deal. When you’re on a climbing wall, you do one hold at a time. Climbing the mountains that AEMP faces is no different. The tasks before us may seem huge, but we must tackle them one at a time. Some of you have “climbed mountains” before, and your expertise is just what we need to get to the top. You can help us get to the summit.

Second, the higher you climb, the thinner the air. It seems like climbing should get easier the more we climb, but often it doesn’t. Often times we spread ourselves too thin believing we can do it all alone. I know I can’t. I need each and every one of you to join me in the climb. The work ahead of us may appear difficult, but we need to press on. We need to talk each other up the mountain.

Third, sometimes you will be scared and that’s ok. Sometimes, thunderstorms roll onto a mountain quite suddenly. Even to the best climbers with the best gear, these storms can be threatening and rather disconcerting. It is during these times that we can draw from one another’s strengths. Sometimes an overwhelming task or fear of what is going on around us brings us together in ways we don’t expect but very much need.

Finally, the view from the top is worth it. I am convinced that AEMP can be the premiere equipment-management organization in the country. It may take a while for us to get there, but our predecessors have laid a starting path for us to follow. We will have to chart some new courses but eventually we will look back and realize that we really felt alive during the climb, that we really accomplished something!

As your incoming president, I look forward to meeting each one of you and helping you find your niche in the organization. Even more, I look forward to the climb to the top of the mountain with all of you!

Keep climbing!
Education Foundation Launches a Legacy

The inaugural AEMP Foundation Legacy Tournament will be played at the legendary Timuquana Country Club on March 6, 2006.

The AEMP Foundation is introducing the first Legacy Golf Tournament at the AEMP Management Conference and 24th Annual Meeting in Jacksonville, Fla., on Monday, March 6, 2006. The purpose of the tournament is to raise scholarship dollars that create a minimum of four scholarships that will support future equipment managers.

The Foundation recognizes that there is a technician shortage and feels that the Legacy Tournament will be a fun and effective way to support the future of the equipment-management profession. To that end, the scholarships will be awarded to the children of AEMP members or AEMP member company employees so that their kids receive support in attending a certified two-year vocational school.

Join Us in Jacksonville

AEMP invites you to join your associates and peers at the AEMP Management Conference and 24th Annual Meeting in Jacksonville, Fla., March 5 to 7, 2006. This year’s conference, held at the Hyatt Regency Jacksonville Riverfront, offers diverse education, a host of special presentations, and an opportunity to gain cutting-edge knowledge that will allow you to be a better equipment manager the minute you get back to the job.

“The Foundation felt that there was no greater priority than supporting the future of the equipment-management profession,” notes Bob Decker of P.J. Dick/Trumball, and president of the AEMP Foundation. “The technology and overall management skills required to succeed in the profession have evolved significantly and we want to help the next generation of equipment management professionals, as they truly are the future. We hope that this initiative will encourage more young people to give serious consideration to the equipment management profession.”

A special cause deserves a special setting, and with that in mind, the inaugural AEMP Foundation Legacy Tournament will be played at the legendary Timuquana Country Club. A private club founded in 1921, Donald Ross, the country’s most famous golf architect of the day, built the course. Timuquana has played host to numerous championships and many past golfing legends including Bobby Jones, Walter Hagen and Gene Sarazen. The course has enjoyed ongoing enhancement and upgrades, and in recent years Robert Trent Jones has been engaged in the long-range planning for course enhancement.

The Legacy Tournament will be played on Monday afternoon, March 6. Cost is $100 per player, $400 per foursome, and includes 18 holes, cart, and a Legacy. Register today at www.aemp.org or call 970-384-0510.

www.aemp.org
The Conference will feature three tracks of education: Essential, Professional (CEM), and Executive. With over 30 speakers, panel discussions and Partner Sessions, there is truly diverse high-quality content. Special presentations include Phillip Van Hooser, a highly regarded leadership expert as the opening keynote speaker; Dick Durrance II, award winning photographer is featured at the CEM Breakfast; and Sue Drinker, renowned photographer and creativity expert highlights the Companion Program.

The 24th Annual Meeting allows AEMP to celebrate excellence in fleet management and other areas of professional excellence. The Fleet Masters award will be presented to both government and private sector winners. In addition, the Technician of the Year award recipients will be recognized, as well as Member of the Year, Associate of the Year, the Richard Hawkins Award, and the pinning of new CEMs.

Combine all of this with dynamic exhibits, numerous opportunities for networking, and Jacksonville, Florida in March and you’ve got the makings for a superb educational experience (and a chance to thaw out if you’re from a colder part of the country). For more information and to register for the AEMP Management Conference and 24th Annual Meeting, please go to www.aemp.org. If you have additional questions, please call 970-384-0510. See you in Jacksonville!
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The Baltimore/Washington chapter meetings are held the 2nd Tuesday of the month; July is the Annual Crab Bus. RSVP is required for all meetings.

Cajun Chapter
President: Mike Bates; Cajun Constructors; 225/753-5857
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For information about chapter meetings, please call Mike Bates at 225/753-5857.

Central Illinois Chapter
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The Central Illinois Chapter meets the first Tuesday of the month, unless otherwise noted.

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The Central Indiana Chapter meets the second Tuesday of each month except for June through August when there are no meetings.

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The Central Ohio Chapter would like to invite anyone interested to attend our meetings on the second Wednesday of the month.

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The Northeastern Ohio Chapter meetings are every second Tuesday of the month at 6:00 pm, from September to May.

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The chapter would like to extend an invitation to anyone who would like to attend the Pittsburgh Chapter meeting held every month.

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The Tri State Chapter covers Southwest Ohio, Northern Kentucky and Southeast Indiana. Meetings are held the first Thursday of the month.

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The Certified Equipment Manager (CEM) Certification program was developed by the Association of Equipment Management Professionals, and is the recognized certification in the industry. The CEM program is designed to elevate professional standards, enhance individual performance and recognize those who demonstrate knowledge essential to the successful practice of equipment maintenance and fleet management.

The registration fee for the test is $245 for AEMP members and $325 for non-members, and a $40 application fee must accompany the application form. Applicants must be registered at least 30 days before the test date (no exceptions). The next test will be administered March 8 at the annual meeting in Jacksonville, Fla. Contact AEMP at 970-384-0510 for details, or visit their website at www.aemp.org.

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Solid Safety Stance

Machine safety — on the job and in the shop — is a must

By G.C. Skipper, Contributing Editor

Safety requires more than lip-service. It must have ownership from the top down as well as from the bottom up.

"Plain and simple, you cannot afford to overlook safety," says William Vanden Brook, CEM, and motor equipment superintendent for the City of Madison, Wis. "Although safety is an extremely broad subject, it is an extremely important issue to all. The moment that a manager or supervisor or foreman ignores it in the face of an employee, he has just reduced his entire safety program forever. You can't afford to do that because of the liability you have out there today."

Sometimes fleet professionals who do enforce safety practices when it comes to equipment, manpower and shop environment, "get a bad rag for their costs," says Vanden Brook. "However, they are looking out for the liability of the whole company or the organization or the city. I can't put a value on that."

Although a municipal fleet manager such as Vanden Brook may face different hazards than a construction fleet manager, one truism applies to both — a work site is a dangerous place, but it does not have to be an unsafe place.

Nobody knows that better than Jack Burler, president of Butler, Cranes & More. For more than 30 years, Butler has worked with heavy equipment. He has held positions with construction companies and crane operations, and has organized and taught safety classes for numerous clients.

"Construction jobsites are dangerous places," he says. "When heavy equipment is operating, jobsites become even more dangerous. Noise; equipment exhaust; earth vibrations; swinging buckets, booms and ropes; and back-up alarms all add to the clamor."

Butler singles out six specific dangerous conditions at a work site. First of all, some equipment operators, especially younger workers or new-hires, need to know how to enter and exit a machine. "OEMs recommend a three-point contact while climbing on or off a piece of equipment," he says. "If you follow those procedures, you probably won't get hurt."

The second danger applies to older workers. They sometimes become complacent and accustomed to their surroundings. For example, the threat is real when equipment is backing up. "Back-up alarms give a false sense of security," Butler says. "When you get on a jobsite with multiple pieces of equipment, everyone becomes accustomed to hearing them. I knew a crane operator who was killed when a concrete truck backed up..."
over him. He simply walked out behind the truck.”

A third dangerous situation involves machines, such as excavators, that can reach up and touch power lines. “There again, people become complacent and just forget about the wires,” Butler says. “There are two dangers here. One, you can electrocute the operator. Two, if an excavator comes into contact with a power line, the jolt going through that machine is like a welding iron. It leaves what I call little BBs from the arc. Later on, the BBs can get into the valve spool and the operator can’t control the stick.”

Fourth, in an excavation more than four feet deep, some type of shoring or trench boxes must be used to protect from collapsing sides.

Fifth, putting together huge units, such as cranes, requires a level area for the assembly. Sometimes stone or gravel is laid down to support the equipment, Butler says. “They haul in limestone and lay down four-inch rocks. That makes it hard to walk on for the mechanic on the ground who is carrying heavy parts. Preparing for machinery set up and tear down is very important.”

Finally, a danger Butler calls “a hot topic today,” involves quick couplers. “There have been several deaths because of this,” he says. “Three deaths occurred in Ohio because buckets fell off the machines.”

Although quick-coupler attachments have certain procedures that operators are trained to use, says Butler, “they don’t follow the training. Take a water-line job, for instance. The operator might use a 48-inch bucket for the excavation. Then he’ll slide the box ahead and work inside the box or he will switch buckets and put a smaller bucket on. He’ll do this 20 or 50 times a day. When he switches buckets, he doesn’t follow the procedure to make sure it is connected and locked. He swings back over and the bucket falls off.”

Although there are several types of bucket attachments available, 90 percent, says Butler, are hydraulic. “They have a hydraulic cylinder with a latch that fastens around the bucket pin,” he says. “There’s also a safety light in the cab that tells the operator when the bucket is latched. But what happens is, when the operator tries to latch onto that

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**Know the Jargon**

In the world of safety, it helps to understand the jargon, such as lockout/tagout. The best way to explain the term is to give an example of how it applies to professional fleet managers.

Todd Perrine at Leslie Equipment gives this example: An equipment manager is called to a jobsite to find out why a machine won’t run. He discovers that it has an electrical problem back underneath the axles. There is a risk that while he’s back there working on the problem, the operator will come up, see his truck and call for him. Since the work site is noisy, he might not hear the operator. Because there is no answer after several times calling out, the operator thinks the machine has been repaired. He hops in the cab, starts it up, and accidentally runs over the mechanic underneath the unit.

Lockout/tagout prevents such accidents. Safety procedures require that lockout/tagout signs be placed on the steering wheel, door handle, or any place easily visible to the person entering the vehicle.

The sign has the technician’s name or initials on it, and he is the only person who can sign off on the machine before it can be moved. Most company policies, says Perrine, hold the operator liable if he sees the tag, pulls it off or ignores it and starts the machine up anyway.

“Basically,” says Perrine, “lockout/tagout tells you that the machine is stopped, out of service, and can’t be used until the person who took it out of service puts it back into service.”

Most field technicians keep tags with them and they simply write something like, “Machine down. Engine problems” and then initial or sign the tag.

Jack Butler, Butler, Cranes & More, says that lockout/tagout is an OSHA regulation. “If you’re changing a tire on a pickup at a jobsite, the regulation states that you need to take the truck keys out of the ignition, put an out-of-service tag on the steering wheel, jack the vehicle up — and to really carry it further — disconnect the battery to disable the vehicle.”

Butler admitted he had never seen anyone do that when it comes to changing a tire, but the regulation makes sense when, for instance, it comes to a mechanic working on a large excavator that has a fire-suppression system on it.

“In order to check the oil on this piece of equipment, a mechanic has to go up on the machine, then down in the house of the machinery,” Butler says. “To do that, the fire-suppression system should be locked out. If it discharges while he’s in there, he doesn’t have any options to get out.”

To lock out such a system calls for the simple insertion of a pin. “There is a procedure and a warning label in the operator’s cab that tells you about this,” Butler says. “The fire-suppression systems have heat sensors, and it is automatically discharged by heat throughout the piece of equipment. It works like a sprinkler system in a building, except rather than discharging water, it discharges foam.”

That, he says, is what lockout/tagout is all about.
pin, he hasn’t fully engaged the bucket. The latching mechanism will close, but the machine doesn’t know if it closes around the pin or around air. The equipment only knows that it’s closed.”

Todd Perrine, CEM, vice president, product support at Leslie Equipment, a John Deere distributorship, says fleet managers should also be aware of hidden work-site dangers. “There are a lot of unknown hazards, such as job sites that are built on hazardous waste dumps,” he says. “Mechanics and vehicles go out there without really knowing what they might be touching.”

Based on his front-line experience, Butler says lack of training makes a job site dangerous. “If you don’t know a danger exists, or a risk exists, you’re apt to find it unexpectedly,” he says.

“I know of a young lad who was hired several years ago to help on a pavement recycling machine,” says Butler. “He obviously didn’t understand the dangers of that job. On his first or second day at the job site, he climbed up on the equipment and, some way or another, got his leg down in the machine. The auger took his leg off. Because of the resulting lawsuit, the boy does not have to worry about income for the rest of his life, although he does have to live with the loss of a limb. As for the contractor, he certainly could have afforded some training.”

Training at Leslie Equipment is done in two ways, says Perrine. Because the market area served by the distributor includes mining operations, Leslie employees, before they go into a mine shaft, go through 30 to 40 hours of training that meets requirements of the Federal Institute of Equipment Mining and Safety. “Then they have issues. Circulated to all company work crews, employees will be required to read the publication, sign it, and send it back in. “That will allow us to track who has and who has not read it,” says Perrine.

Another method used by Leslie Equipment to raise safety awareness among employees is to conduct monthly shop inspections to check such things as rigging, shop cleanliness, exposed outlets or wiring that could shock someone, and trip hazards.

As for the city fleet in Madison, says Vand Brook, training focuses on technicians who work on fleet equipment. To climb further up the career ladder, technicians are encouraged to receive training through the Automotive Service Certification program.

In addition to training, fleet professionals can take other steps to make a work site safer, Butler says. “You’ve always got fall hazards at a building site, so attention to general housekeeping is important. Supplies need to be picked up. Don’t have welding leads, extension cords, water hoses and discharge hoses lying around. And floor openings should have warning signs. You might have people trained in site-specific rules, but a mechanic coming in from outside may not.”

“Construction job sites are dangerous places,” he says. “When heavy equipment is operating, job sites become even more dangerous. Noise; equipment exhaust; earth vibrations; swinging buckets, booms and ropes; and back-up alarms all add to the clamor.”

—Jack Butler, president, Butler, Cranes & More
know that a piece of plywood is covering the opening. I’ve seen sites where they don’t put anything at all over the opening.”

As for equipment, Butler says, “Every OEM publishes guidelines.

Safety Tips Review
The following are a few guidelines that will help create a safe work environment and increase safety awareness among employees.

- On large construction jobs, visit the office trailer before entering the site. It’s a quick, easy way to find out where hazardous areas, wires, chemicals and other dangers are located.

- Have personnel wear reflective vests so they are clearly visible on the jobsite.

- Institute a safety-glasses policy to protect eyes and similar procedures to protect ears, hands and feet with appropriate safety wear.

- Fleet managers should track the number of injuries by type. Review the results at monthly shop meetings or send memos out to mechanics and operators.

- Keep communications with workers open. If an injury occurs, workers will hear about it through the rumor mill. Investigate the accident and send out an e-mail giving details on what really happened and what should be done to prevent similar accidents in the future. This will give employees something to talk about.

- For noisy work environments, such as frequent use of hammers, consider having your employees’ hearing checked annually. If hearing problems increase, workers may not be using ear plugs. Correct the problem. Also monitor your shop to make sure the decibel levels are not out of spec.

Operators and managers should be familiar with them. Everyone tells you to do a walk-around inspection. The things that get missed are pins — keeper pins, retaining bolts that are missed. When a pin comes out, sooner or later a part of the equipment will fall off.”

Butler advises starting the inspection while still 50 feet from the machine. At that distance, any brake or hydraulic fuel leaks or flat tires are easily spotted.

Check for worn tires. If they need replacing, do it, not just because of safety, but also to prevent further downtime on the machine. Of course, check lights, look for broken glass, cracked windows that obscure the operator’s view, make sure the wipers work, and check the lugs to see if any are missing.

Butler believes strongly in ensuring that machine controls are all free when the machine is first moved. “Make sure steering is responsive,” he says. The operator needs to move the equipment a short distance and stop it to check the brakes. Don’t forget the parking brake, as well, or the seat belts.

One simple step that fleet managers can take to make jobsites safer, says Perrine, is to go to the job trailer first. “They will do a hazardous analysis with you and go over any hazards — chemical lines, wires, blasting areas. You should do this before you even go out to work on the equipment. They will tell you if you need to wear hearing protection or if you need steel-toe shoes.” In short, he says, “a quick stop at the office trailer will give you information right up front to keep you from getting into trouble.”

Safety reaches beyond personnel, equipment, and bricks and mortar. It also involves adhering to both federal and state regulations for both motor vehicles, such as dump trucks, and off-road units such as graders. One falls under Department of Transportation jurisdiction; others are regulated by OSHA. Combined with whatever state and local rules apply, staying legal can turn into a high-wire balancing act.

Vanden Brook, however, has handled the regulations problem for Madison’s fleet this way: For every piece of equipment purchased by the city, he says, “we create the ABCs—A service, B service and C service. Part of that includes the safety inspection which is based on the manufacturer’s recommendations,” he says. “We go through the operator’s manual of the vehicle and whatever is mounted on it — dump truck, garbage truck — and look at what the OEM recommends for servicing and inspections.”

All that information is built into a written sheet so the technicians know what to look for. “After you’ve done the same garbage truck a dozen times,” you don’t need the sheet very often,” Vanden Brook says. “But to start with, you do.”

The up-front cost of setting up based on OEM recommendations “is well worth it,” he says. “The OEM recommendations will take into account all those government regulations.”

Safety is too far-reaching, too important, and if not practiced, too costly to treat lightly or ignore. “When you talk about safety,” Vanden Brook says, “you’ve got what the technician does, what the operator does, what the supervisors does, and what the shop does, such as handling fluids correctly. If you do things safely, it just makes things easier for folks.”
Katrina, Rita Leave Indelible Imprint

Here’s how two AEMP members responded to the hurricane crisis

By G.C. Skipper, Contributing Editor

When Cajun Constructors of Baton Rouge, La., went into New Orleans and the surrounding area to ramp up for an industrial project and a couple of public works jobs, equipment division manager Mike Bates, CEM, didn’t know his priorities were about to change and change quickly. He was headed toward a crisis of destruction and devastation beyond his imagination.

Meanwhile, in Houston, the city’s assistant director of public works and engineering, Carl Bowker, didn’t realize that his own priorities would also be dramatically turned upside down.

Both AEMP members were soon to feel the impact of two hurricanes that arrived only weeks apart — Katrina and Rita.

At the time Cajun was preparing to start its New Orleans area projects, Hurricane Katrina was just a storm blowing across the September gulf. As it gained intensity, forecasters thought she would turn east and make landfall along the coast line between Pensacola, Fla., or Mobile, Ala.

“We had several days notice,” Bates says. “We knew it was coming. All of us thought the hurricane would turn east. We didn’t anticipate it going straight into New Orleans like it did.”

Because the jobs were just starting up, Cajun had only six or eight pieces of construction equipment in place, along with 200 to 300 people. As it became apparent that Katrina had turned and was headed straight for New Orleans, Cajun moved equipment to higher ground, closed up the jobs, and “got our people out of there,” Bates says. “We went home to wait for the hurricane.”

Katrina slammed into New Orleans as a Category 4 storm, but Bates, fortunately, had no injuries to his crew and, other than one pickup and two or three other units that were flooded, no loss of equipment.

The next morning, “we came back to work and found we didn’t have any electricity,” he says. “But we started the process of getting our operations back up and running — answering the phone, trying to locate our people, trying to assess damage to our jobsites.”

Since Baton Rouge is only 80 miles north of New Orleans, Bates says his company suffered extensive power outages and interruption in routine business. The banks were closed, state offices were closed, and schools were...
closed. "But our buildings were still standing," he says. "Most of our damage was caused by tree limbs and wind. We were able to start moving around and getting back to work the day after the hurricane."

That's when news started coming in about flooding in New Orleans and the necessity of evacuating thousands and thousands of people. Within 24 hours, Bates says, he received a call from one of the biggest contractors in the area, Bob Brothers, who asked if Cajun would help them haul concrete barricades to try and stop the leaks in the levees.

"We had a caravan of trucks consisting of the 10 trucks we sent, plus vehicles from just about every contractor in the area," Bates says. "Bob Brothers was the primary contractor, and they called everybody they knew who had trucks and would be willing to help."

As the situation in New Orleans grew worse, Carl Bowker watched and waited in Houston, as were others throughout the country.

While Bates’ trucks were beginning to roll, more phone calls came in to Cajun asking for assistance in an "unwatering operation" that would help pump flood water out of New Orleans. "We were pumping water within 48 hours of the call," Bates says. "We moved in 60 to 80 pumps and set them up at strategic locations. Our job was to pump water out while repairs were being made on the levees. We called all over the country and had pumps shipped to our Baton Rouge office. From there, we dispatched the pumps to areas where they were needed."

By Day Two, Cajun had set up a 24-hour operation. As they learned more about what was going on in New Orleans and realized the importance of the role Cajun would play in Katrina’s aftermath, the sense of urgency mounted. The tone of the entire undertaking, says Bates, was driven home when Cajun president Ken Jacob called in the managers “to make sure we understood what we were about to do. He reminded us that this was a crisis and this was our top priority. We were to look out for our people and the people involved in the crisis. His exact words,” says Bates, “were that our task was to help save the city.”

Cajun went into crisis-management mode, bringing in extra personnel to operate around the clock. Bates bought a camper and parked it at the company for his truck drivers. He built bunk beds in the back of the shop to sleep more people. Extra generators were brought in; an additional 50 pickups were purchased during the first two weeks; office personnel was increased; additional heavy haul trucks; low-boys and flat beds were rented; and mechanics from other vendors were brought in to stay at Cajun.

"Some of the drivers and mechanics were from towns like Morgan City and other places. They couldn’t go home because there were no lights or food. So they stayed here,” Bates says. It didn’t take long for the full impact of the destruction to start coming to light. Anything north of Interstate 10 was all right. Everything south of I-10 no longer existed.

“Most of our guys are from south Louisiana, so this is their home,” Bates says. "The destruction was unbelievable. We’re talking about fishing villages, the shrimp industry, huge ice plants, processing plants and mile after mile of marinas that supported the fishing industry, chemical plants that had operated for 25 or 30 years — it’s all gone. There’s nothing but a road with water on both sides.”

One crew, delivering equipment to New Orleans, came up on a barge sitting in the middle of I-10. "A barge," Bates says, "Can you imagine?" They had to drive around it on the shoulder of the road. Another crew went down the panhandle to the Delta and came upon a house that had washed up on the road.

But there were brighter sides, Bates recalls, incidents that, in retrospect, illustrate the sense of urgency everyone was working under. As the crews made their way out into the community of Jefferson Parish, St. Bernard and Orleans Parish, to make point repairs to bring the sewer and water systems back up and online,
communications became even more of a problem.

"We're out there in the middle of the night — and keep in mind that we've been doing business with these vendors for years, so they know us very well. We could see all kinds of rental equipment inside the gate, but we can't get them on the phone. We literally took the gate off the fence, went in there, took a few machines, loaded them up and left them a note. That really happened," Bates says.

Hauling the barricades and pumps and operating 24-hour shifts gradually accomplished the task. "We were in the process of demobilizing when Rita came," says Bates. "We speeded up the demobilization process and almost went back to a 24-hour cycle so we could get out of there. We were concerned that Rita was coming and it was going to happen again."

**Rita's rampage**

Rita did come and hit the Texas coast with the same stunning blow as Katrina. "Rita ripped through here," says Carl Bowker. "And 'ripped' is a pretty accurate description." Rita hit on September 24; the City of Houston started making preparations on September 21.

"There is a 1,000-mile line that is drawn through the Gulf of Mexico and the Caribbean. When the storm crossed the 1,000-mile mark, the city's emergency operating plan really kicked in. We started prepping everything on the 21st."

The Gulf Coast regional plans were brought online and a series of steps were initiated to prepare, he says. All underground fuel tanks, for instance, were topped off. Vehicle fuel tanks were also topped off as were emergency generators. "When the hurricane crossed the

1,000-mile line at 10 miles per hour, we had roughly 100 hours, or about four days, to do something," Bowker says.

This happened three weeks after Katrina and many Katrina evacuees had fled to Houston for safety. "After Katrina, everybody here started looking at their emergency plans," Bowker says. "We were actively monitoring our plans when this happened."

Everything was supposed to be ready by Friday, but Rita increased speed. "We were expecting to get fuel deliveries through Thursday, but they shut down the pipeline early," Bowker says. "We had a lot of fuel because the fleet basically stood down and was not consuming very much."

Bowker also dispersed the fleet. Vehicles were moved north of I-10 because computer projections said anything south would flood, says Bowker. "We moved the fleet out of the flood-impact areas. It doesn't do any good, we thought, to be like New Orleans and leave your stuff there to wind up under water."

Another thing Houston learned from the New Orleans disaster was to allow employees to leave and take care of their families. On Wednesday and Thursday, employees were allowed to move their families to safety and then report for duty by 6 p.m. "You can't concentrate on your job if you're worried about your family," Bowker says.

Since the storm could have hit any time from the morning of September 21 to the morning of September 24, everybody did what they had to do and returned, Bowker says. "There were a couple of cases, however, where they couldn't get back."

After witnessing the devastation of Katrina, everyone left when Houston's evacuation orders went out. Unfortunately, everybody left at once. "In a period of 48 hours, from Galveston to northern Houston, it looked like a 1950s horror movie," Bowker says.

"When I went up to my house to take care of my family, I-610 was empty. I saw paper blowing across it. All I could think about was that I was waiting for a giant spider or a giant ant to come out. I made it up the freeway for about 20 miles. Then I hit the massive traffic jam."

Fortunately, Bowker was only 100 feet from his exit, so he made it home. About 1:30 a.m., he went out and found that nobody was on the road. He took his family to a train station and to safety.

"We made the trip in one hour that took other people 36 hours," he says. "The only things we saw were abandoned 18-wheelers and cars that had run out of fuel."

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"—Mike Bates, CEM, Cajun Constructors"
As traffic continued to jam up and more vehicles ran out of fuel, the mayor of Houston declared a state of emergency. "People were panicked," Bowker says. "They were doing crazy things like pulling guns on each other. Fist fights broke out over fuel. It was like the end of the world and it didn't matter what they did."

To clear up the mammoth gridlock, Bowker sent out five 55,000-gallon mobile tankers routing them along I-45 toward Dallas, I-290 toward Austin, I-110 west toward San Antonio, and I-59 toward Cleveland.

"You can't give away government property, and fuel is government property," Bowker says. "We were able to get around that legality when the mayor declared a state of emergency."

The system of fuel supply is not designed for everybody to run out of fuel at one time, Bowker says. "There was no gas from Galveston to Dallas or from Louisiana to San Antonio, and because the refineries were shut down, there was no fuel available. We had the only fuel in the region in bulk. Our guys were out there 24 hours a day until the roads were cleared," he says.

Because of the threat of violence and the panic among drivers, Bowker's tankers traveled under tight police escort. To maneuver around the jam ups and reach stranded motorists, tankers traveled along the shoulders, took back roads, and went down into ditches and back up again.

"The rule of thumb was to have a trooper look into the car at the gas gauge," Bowker says. "If you had less than a half of tank, you got five gallons. If you had less than a quarter of a tank, you got 10 gallons." He says 99 percent of the people were grateful, but sometimes a driver would try to sneak back in line. "But they were yanked out," says Bowker. "The Texas Rangers and troopers took care of us. My people were never in danger."

When Rita did come in, Houston only caught part of the storm. The northeast quadrant of Houston, outside the 610 loop and outside Tollway 8, were the places where storm damages were the most obvious.

Then came the clean up. "After they got I-59 open, we went up there and found that about every 50 feet a tree was lying across a power line," Bowker says. "I passed convoys of electric utility crews out of Chicago and Kansas City — hundreds of crews — massive convoys in their trucks coming into the region to help."

Bowker dispatched 10 debris-removal teams, each made up of five vehicles, including graders, dump trucks and crew trucks with men armed with chain saws.

An issue in New Orleans, says Bowker, was that many of the clean-up vehicles suffered cut and punctured tires. To avoid that problem, all the Houston fleet tires were pumped full of tire sealant.

When the numbers were tallied at the end of the operation, Bowker's department had refueled 191 stranded motorists on Houston freeways with 1,650 gallons of gas; refueled city emergency generators with 3,858 gallons of diesel fuel; refueled 334 stranded motorists in Livingston, Texas, with 3,341 gallons of gas, not including fuel provided for Salvation Army food canteens in Galveston, Port Arthur and Beaumont, among other towns; refueled Red Cross generators at the Livingston Junior High shelter; and provided fuel for emergency workers stranded at the hospital in Livingston.

Nearly a month after Hurricanes Katrina and Rita left the region, Mike Bates at Cajun Constructors says New Orleans is still recovering. "It has a pulse," he says. "There is still water standing in south New Orleans, but we're out of the crisis mode and into the repair mode. Electricity is starting to come back on and the utilities we were involved with are back on line."

Emphasizing that Cajun was only one of many contractors that helped New Orleans, Bates summed it up this way: "Now we're working on rebuilding and restoring the levees. But we have to hurry. There's another hurricane season coming."
How to Choose Asset-Tracking Systems

It's all about knowing where the machines are and what they're doing

By G.C. Skipper, Contributing Editor

One of the most challenging facets of managing a fleet is keeping up with the machines and knowing what they are doing — or not doing.

One way to pinpoint equipment location and tell if it's running or not is by investing in an asset-tracking system. At its most basic level, asset tracking identifies where the machine is and how many hours it runs each day. Knowing the location has numerous benefits, allowing fleet managers to find and move a machine from one site, where it's not being used, to another site where it's needed. Hours run, of course, contributes to equipment utilization and productivity.

On a more advanced level, tracking systems can send out alerts when something is wrong with a unit or maintenance is overdue. The system monitors engine starts and stops, maintenance data and usage hours, all of which helps equipment professionals establish better preventive maintenance schedules. When used with a "geo-fence," these systems also alert managers when a machine arrives at a particular job and when it leaves that job.

"A geo-fence is an imaginary fence around a piece of equipment," says Jay Dee Sale, director of operations for Red Mountain Machinery. Red Mountain is a heavy equipment rental firm that serves southern California, Arizona, and southern Nevada. It has equipment all over the territory, so two years ago the company installed a system called GlobalTRACS from Qualcomm.

Asset tracking and asset management are not synonymous, says Will McFadyen, president of McFadyen & Associates, a full-scale technical consultancy and custom programming group focused on contractors, rental houses, OEMs and equipment dealers.

"There's a big difference between the two," he says. "Asset-tracking

Red Mountain Machinery uses this GlobalTRACS report to pinpoint the location of the equipment in the field and keep track of how many hours it has run. In this case, a Caterpillar 631E 92, located 43.68 miles from Red Mountain, Ariz., ran a total of 8.5 hours from Oct. 14 to Oct. 21, 2005. Yellow indicates when the engine was on; dark blue shows when the engine was off. The light blue bar indicates that no data was reported during this period.
Of course, asset-tracking and asset-management systems can be, and often are, integrated. **In a successful marriage of the two systems, for example, the hours a unit runs at a particular jobsite can be accurately tabulated and transferred into the asset-management system to determine the exact amount charged back to that particular project.**

Software lets you know where the equipment is. It also provides basic functions, such as how long the machine has been running, and basic preventive maintenance data. It might not necessarily include such things as detailed maintenance calculations, purchase orders, work orders, and utilization analysis. Those types of things are reflected in asset-management software.”

Of course, asset-tracking and asset-management systems can be, and often are, integrated. In a successful marriage of the two systems, for example, the hours a unit runs at a particular jobsite can be accurately tabulated and transferred into the asset-management system to determine the exact amount charged back to that particular project. The down side of that transaction, however, is that managers can’t distinguish between actual hours run and idling hours, such as time spent warming the machine up on a cold morning, without the incorporation of sensors.

Yet when all the benefits are considered, McFadyen says, asset tracking is “absolutely advantageous” to contractors, rental houses, OEMs and, “anybody involved within the equipment triangle.”

One person who is part of that triangle is Joe Schuster, fleet manager at Emery Sapp & Sons. The company, with a fleet of about 500 machines, half of which are heavy equipment, provides road and bridge building, concrete paving, and residential and commercial site development in central and western Missouri, eastern Kansas and northwestern Arkansas. “At any given time, we probably have 50-plus different jobs underway in three different states,” Schuster says.

Although Schuster’s system, also GlobalTRACS, is fairly new — installed in July 2005 — he’s already seeing benefits, he says. Previously he relied on field crew supervisors to turn in progress reports. Many times that didn’t happen, and when it did, the information was not accurate or timely. Asset tracking has definitely solved that problem, he says. As a result, the company now has better timing on oil changes, for example.

The system also has cut down on time spent traveling to a jobsite to service a piece of equipment, only to return and discover the next day that there were two more units at the same jobsite that also needed servicing, Schuster says.

Another benefit is that the company can now group and manage preventive maintenance schedules much more efficiently. “Prior to the winter season, it’s critical that we check the anti-freeze levels in each piece of equipment,” Schuster says. “We also have to determine if the coolant is actually protecting the equipment to the degree it needs to. With our system, it’s easy to locate where each unit is.”

Schuster’s rental expenses also have gone down. “The jobs vary so much year to year that it’s hard to quantify how much,” he says. “I know when we get a request to rent a piece of equipment, we look in the system and many times move a unit that is being under-utilized.”

Although there are a number of fleet-tracking system providers, McFadyen says, the “Coke, Pepsi, and 7-Up kind of crowd” include Qualcomm, Trimble, and Micrologic in addition to Caterpillar, Komatsu, and others.

No matter what brand of asset-tracking system is installed, McFadyen says, it shouldn’t necessarily change how you do business. “It should be used to enhance your knowledge about the business that you’re doing,” he says. “Fleet tracking can give you a wealth of data, and one of the things you want to do is ask your provider to turn that raw data into useful information.”

Once the information makes sense, says McFadyen, it can most certainly affect bottom-line decisions. “Information from these systems helps you determine things like fleet optimization in terms of knowing which pieces of equipment are your dogs — that is, the units that are under-performing,” he says. “They will help you better plan your PMs since scheduled maintenance will come into vision a lot more clearly than it would if you weren’t using a system like this.”
"The nice part about it is that once you have the equipment location and hours, you can build a maintenance system that will be able to incorporate cost," he says. "You will know what it cost per hour to own and operate that equipment. This is a huge issue in construction."

Before such technology came along, supervisors, for instance, turned in time sheets that showed how long the equipment ran for a given period of time or when it was due for service. "This still goes on today, but a lot of time it's a guessing game," McFadyen says. "There tends to be a lot less accurate data when it's recorded by humans."

The supervisor in the field, he says, might guess that the machine ran for seven hours when, in reality, it ran for 11 hours. This causes the actual hours used to be either over- or under-estimated.

"Obviously, that has a big effect on the bottom line," he says. "It raises such questions as, 'Am I doing my PMs too soon because of that, or too late?' If PMs are done too quickly, you could be spending too much money. If a PM is done too late, it affects the condition of the equipment and could be eating away the health of major components. That causes the machine to fail more quickly. When you're talking about a machine that costs $500,000, that's a pretty substantial chunk of change."

Sale describes how his system works in terms of hours and maintenance. "We schedule PMs at 250 hours," he says. "We know every day what the hours are on the machine. We are able to be more exact, and by knowing what the hours really are, we know exactly when to do the PM."

In addition to accuracy, the system reports are valuable tools for fleet managers. There are the monitoring hours and location reports, already mentioned, and Schuster also receives an equipment-maintenance summary.

"The summary tells us when an oil change is due on a machine," he says. "At 50 hours prior to service being due, the system will flag that machine as yellow and drop it into a group of machines to be serviced. If the unit goes over the service interval of 250 hours, the system highlights the equipment in red."

Another report shows what pieces of equipment are on a certain job and what jobs a particular machine has been on and when, he says. "It will tell you the history of that unit for the last three months."

Schuster has just reached the point where he can now use the system to monitor the health of a unit. "We set up alerts to tell us if oil pressure drops below a certain level or if an engine coolant temperature climbs above a certain level," he says. "It lets us know when a transmission temperature reaches a critical level. When that happens, the system sends out an alert."

The alerts go out in three ways: via e-mail, to a pager, and to three different cell phones until someone answers. Schuster had problems installing the system on older equipment. Although the boxes on the machines are "fairly durable," he says, "if you happen to have an electrical problem on the older units, it sends you a false alert. You have to make certain your electrical system is up to snuff or you'll get some bad data." This particular problem showed up in about 5 percent of his fleet, he says.

As for the system used for tracking and reporting at Red Mountain, it's not surprising that the reports that have made the most difference, according to Sale, are the ones showing the hours a machine runs. That up-to-date data, he says, is something the company never had before.

"We didn't know if the machines were being run 24 hours a day or an hour every three days," he says. "It was very hard to know when to schedule preventive maintenance. Now we can schedule our service people to do the PM at the correct time."

The value of asset-tracking reports many times depends on the industry, according to McFadyen. For example, a contractor might be extremely interested in utilization because he
Shown here is a Maintenance and Utilization Summary that is one of the reports generated by GlobalTRACS, an asset-tracking system used by Emery Sapp & Sons. The summary tells when oil changes are due. Fifty hours prior to service being due, the system flags the machine in yellow and rings it into a group of machines to be serviced. If the unit goes over the service interval of 250 hours, the system highlights the equipment in red. Other reports from the same system track such things as the work history of the machine for the past three months and captures critical data such as oil pressure readings, engine coolant levels and transmission temperature. If a problem is detected, such as a drop in oil pressure, the system immediately sends out multiple alerts via e-mail, to pagers, and rings three different cell phone numbers.

may be thinking of streamlining the fleet. A rental house, on the other hand, might focus on preventive maintenance features to ensure everything is done on time.

Since the construction industry has now caught the attention of a number of asset-tracking system providers, fleet professionals should try out different programs before making a final decision.

Most providers usually give you a three-month trial period, says Schuster. “If you don’t decide to go with that particular system, you send the equipment back. You may have to pay a small fee for the air time you use.” Sale also tried out several systems before making his decision, he says.

In addition to comparing the different systems, there are other guidelines that equipment managers should heed.

- Work with a provider that provides the means to integrate its fleet-tracking solution with either a fleet-management or maintenance application.
- Consider the hardware itself, the physical roughness and ability to stand up to the rigors of the construction-equipment environment.
- Determine the need for a satellite-based system or a cellular system. Satellite is good for companies that have equipment going outside the area. Cellular systems, as the name implies, work best where you have cellular coverage. Satellite systems usually cost a bit more than cellular.
- Know the reliability of the messaging network. How long does it take for the message to travel from the equipment, to the message center, then to you?
- Find out who sees and owns the data. What are their intentions on how the data will be used?
- Make sure the captured data is secure. Is it stored on the user’s site or at the provider’s site? What precaution is the provider taking to ensure data doesn’t go into somebody else’s hands?
- Make certain the provider really understands the industry.
- Try to work with well-established providers. Invest in a system from a company that will be around a few years from now.
Off-Road Radials

Tires deliver strong wear and life benefits in tough applications

By G.C. Skipper, Contributing Editor

There is no doubt that radial tires have left an indelible footprint on the construction industry and other off-road market segments, such as mining and quarry operations.

In fact, the construction of that footprint is what separates radials from bias-ply tires and, say tire manufacturers, improves traction, stability, handling, tire life and puncture resistance, accomplishing all while running cooler. Radials improve fuel economy as well, a fact supported by data from on-highway passenger vehicle use. Yet showing fuel efficiency in off-road applications is harder to nail down, given the myriad working environments and types of equipment that compose the off-road market.

"We don't even put the fuel thing out there," says Keith Rowell, corporate accounts technical support manager, Bridgestone/Firestone Off Road Division. "But we do put the cooler running, longer lasting, better wearing and longer tire life benefits out there."

One way the earthmover radial tire differs from bias-ply tires is that steel belts, rather than fabric, are used for the cord material.

Radials are constructed in two parts. First, a single layer of rubber-coated steel cables arches from one bead to the other to form the tire casing. Second, numerous rubber-coated steel belts are placed in the crown, under the tread, to form a strong stabilizing unit.

"Rather than laying the steel cord as a bias, we lay it radically, which means it goes from the bead straight around to the other bead," says Michael Reich, quarry account manager for Michelin. "You have that one layer that is strong enough to support the weight of the vehicle by itself. It has the strength to carry the load. But in addition, we also put steel belts around the tread area, or the crown facing. We put multiple layers of steel cord, one on top of the other, which does two things: One, it helps protect the tire from debris that can cut or damage it and, two, it adds stability to the footprint."

The sidewall and the tread formation function separately, Reich says. There is a flat footprint for the tread that sits squarely on the ground. The casing itself has the ability to deform separately from the tread.

Tires generally last twice as long because there's not much tread squirm. This also makes the tread last longer.

Bias-ply tires, by comparison, are made of rubber-coated plies, usually nylon, placed on top of each other at about 30- or 45-degree angles. The plies are then wrapped around...
the bead wires, which anchor the tire to the rim, to form the casing, or air chamber. The plies are then covered with more rubber to form the tread pattern. "You continue to put more plies in until you get the desired strength for the load you have to carry," Reich says.

"Radials give better stability for machine handling and traction," says Tim Good, off-road global accounts manager for Goodyear Tire & Rubber. "A radial with its footprint provides more net-to-gross. You're utilizing more tread face for traction, so you're getting more deliverable torque to the ground with less spin."

Also, he says, radials have a wider footprint and many times they will "engulf or walk over an object." That helps stop cuts, bruises and flats.

Scott Sloan, vice president of engineering and technical services at Titan Tire, says, "Generally speaking, radial construction benefits include improved tread wear. This is attributable to the tread and body of the tire working independently of each other, which allows less movement of the tread surface as it contacts the ground rolling through the footprint." For the same reason, he says, rolling resistance is less and equates to improved fuel efficiency.

Radial design contributes significantly to equipment uptime and availability, according to tire makers, since radials run cooler, carry heavier loads over longer distances at faster speeds, and are harder to puncture.

"You don't have downtime due to tire issues that you would have with bias ply tires," says Goodyear's Good. "If the machine runs over a rock, for instance, a bias tire won't give, so it has a tendency to fail. A radial tire, by comparison, engulfs the object. Radials also have steel belts, rather than fabric belts, to protect against failure."

Radials also give machine operators a smoother ride. "You don't have as many issues with jarring or back problems," Good says. "At the end of the day there is less operator fatigue with radials."

There is also protection for the machine itself, according to Bridgestone's Rowell. "Most equipment doesn't have suspension systems for a comfortable ride," he says. "They may have shock absorbers on some, such as haul trucks, but your loaders and graders don't have any suspension system whatsoever. They use the spring rate of the tire as the ride comfort for the machine."

The spring rate on a radial is about 4 percent that of a bias ply tire, according to Rowell. "If a properly inflated bias tire, under proper load and speed, has a 6-percent deflection in the sidewall, a radial will have 10 percent," he says. "The better spring rate cuts down on damage to the equipment. When you have less vibration in the sidewalls, you take up some of the shock, and that takes some of the stress out of the frame and other equipment components."

Michelin's Reich concurs. "Because radials last longer, typically you'll cut the amount of servicing in
half," he says. "The tire will last twice as long, so you don't replace it that often. Since a contractor doesn't know what he's going to be into next week, radials are more flexible because they are much more resistant to downtime due to cutting. That's the main thing, from a profitability standpoint.

"If a fleet manager sees a tire wearing out, he can schedule around it," he says. "What costs contractors money is when he's working on a deadline and, right in the middle of some project, the machine goes down with a flat. That's a tremendous headache, and it happens a lot."

**Market hesitancy**

Although a large share of the off-road market has embraced radials, there are still hurdles.

For one thing, radials cost more than bias-ply tires. "Cost is always an issue, absolutely," says Bridgestone's Rowell. "Quarry managers want to know what will it cost today, not sometime down the road. We have accumulated numerous data that show radials save money, last longer, produce less machine downtime, and that they can carry greater loads than a bias tire. If you're moving more material at less downtime, then you're going to have a higher product output."

But, in some cases, it's still a selling job. Return on investment varies greatly due to application and work environment, says Rowell. "It depends on each individual quarry, and the only way you can tell is by tracking each individual tire. Every tire, regardless of who manufactures it, has its own identification number. If you don't have a software-management system to track tires, you won't ever know what your ROI is or which tire is the best tire to run."

Titan's Sloan says cost justification is "the big question," and it depends on each operation. "If the operation is more continuous, has long distances for travel, an argument for the more expensive radial tire could be made, especially with mounting fuel prices," he says. "If it's a stop-and-go application in rough terrain, it would be difficult to justify. Really, it boils down to what the operator or owner is com-

**Radial Tire Product Gallery**

**Toyo Tires** has introduced the T-352, E-3/L-3 off-road radial tire for use on articulated dump trucks and loaders. The tire provides maximum traction for equipment used at construction or mining sites. Offset tread blocks help prevent sand and mud packing while also ejecting rocks. Tread design provides traction in a variety of conditions including cornering and operating on slopes. For more information, e-mail ToyoTech@ToyoTires.com.

**Bridgestone's VRQP (V-Steel Rock Quarry Premium) off-road radial tire** features a new pattern specially designed for earthmovers working on rock quarry and other rough terrain. VRQP tires are said to have extra long life, high cut resistance and powerful traction. For more information visit www.bfor.com.
fortable with."

Another issue, according to Good at Goodyear, is that, initially, operators complained about "the feel."

"Right now, if you have a machine with bias tires and you put radials on it, you'll still feel the difference," he says. But once operators adjust to radials, he says, "they won't go back."

Although radial technology is well advanced, key developments and trends are emerging in tire design and product improvement.

Bridgestone, for example, continues to expand its rubber compounds, says Rowell. "We're looking at more ways to use synthetic materials. Rubber is becoming scarce. Rubber tree plants can only be grown about five degrees above or below the equator. That's pretty limited. Another reason for exploring more synthetic material is oil dependency, which is a problem."

Tread pattern is yet another key development area, he says. "The only reason for a tread pattern is to cut down through adverse conditions — slop, mud, rain — to reach a hard surface to give traction," he says. "How that tire disperses matter such as rain or snow depends on the tread pattern. The tread has to be self-cleaning to get rid of debris it picks up, such as stones. We're continually looking for better tread patterns that gives traction in adverse conditions."

Another trend is toward a wider tire, such as the Goodyear 65 Series used on articulated trucks and loaders, says Good. "This gives you even better traction and stability," he says. "As customer demands change, the tires also have to change to run cooler."

Reich says the most recent development at Michelin is the introduction of the "first ever" radial skid-steer tires. "They offer some pretty amazing tread wear," he says. "If you think about it, a skid-steer is designed to wear the tire out. With a radial, the advantage is dramatic, cost-justifiable life spans; plus it offers tremendous savings by reducing downtime due to flats."

Sloan says Titan is currently working on new tire designs for loaders, articulated dump trucks, and logger skidders. "These new designs could potentially have a dramatic cost impact — that is a cost reduction — while improving the performance for equipment manufacturers and end-users," he says.

Reich agrees. "Manufacturers are working to develop radials with higher treadwear and higher protection against damage while maintaining, or even increasing, the speed capability of tires, especially on haul trucks," he says. "We should see continued developments that make vehicles more productive. We're trying to take it to the next level of giving better tire protection, better life, while at least maintaining the load capacity and the speed necessary to deliver the product. We see that as being key to the marketplace."

Michelin has introduced the first radial tire for skid-steer loaders. The XZSL Stablix is a steel-belted radial with steel casing and special rubber compounds that increase resistance to cuts and abrasions for fewer flats and longer tread life. It features enhanced traction and handling and a smooth, stable ride. The radial skid-steer tire is available in three sizes: 10R16.5, 12R16.5 and 27x8.5 R15. More details are available at www.michelin.com.

The Yokohama RT31+ is a radial off-road tire designed for use on articulated dump trucks and wheel loaders using size 26 5R25 tires. The tire features a special radial tread pattern that is nondirectional, which enables the tire to give better traction while reducing vibration. New specially formulated tread compound provides resistance to wear and cuts. For more information, visit www.yokohamatire.com.