Take Time to Choose the Right EMIS

Page 20

Page 28
Fleet Masters

Page 30
Remote Technology

Page 35
Ground-engaging Tools
Do I Have the Right Players?

By Marilyn Rawlings, CEM, 2006-2007 National President

With the current, nationwide technician shortage, fleet managers are becoming more and more concerned about being able to provide quality service and repairs to their organization’s equipment.

Too often, as leaders, we hire employees haphazardly. Because of desperation, lack of time, or just plain ignorance, we quickly grab any candidate who comes along. Then we hold our breath and hope everything works out. But hiring needs to be done strategically. Before you hire a new employee, your options are nearly limitless. Once you have made the hiring decision, your options are more limited. Hiring an employee is like skydiving: Once you’ve jumped out of the plane, you’re committed. The key to making the right choice depends on two things: 1) your ability to see your organization’s big picture; and 2) your ability to judge potential employees during the selection process. You should begin with an assessment of your organization’s needs.

While he was the manager of the Chicago Cubs, Charlie Grimm reportedly received a phone call from one of his scouts. The man was excited and began to shout over the telephone, “Charlie, I’ve landed the greatest young pitcher in the land! He struck out every man who came to bat...twenty-seven in a row. Nobody even hit a foul until the ninth inning. The pitcher is right here with me. What shall I do?” Charlie replied, Leadership Confidence, having the right players determines 60 to 80 percent of the success of any given company or organization. If you want to give yourself a chance to win, start by picking winners.

Then, take the process one step further. Why not schedule your top performers to participate in this fall’s Certified Equipment Manager Institute in Dallas Oct. 29 to Nov. 1, 2006. Give them opportunity to learn new things and grow in their knowledge of the equipment industry. In turn, they will demonstrate to you what they can accomplish if given the chance.

“Having the right players determines 60 to 80 percent of the success of any given company or organization. If you want to give yourself a chance to win, start by picking winners.”

— Bob Biehl, Increasing Your Leadership Confidence

“Sign the guy who got the foul. We’re looking for hitters.” Charlie knew what his team needed.

Lou Holtz, another great sports leader, put it this way: “You’ve got to have great athletes to win...You can’t win without good athletes, but you can lose with them. This is where coaching makes the difference.” As Bob Biehl says in Increasing Your
AEMP 24th Annual Meeting Evaluations Confirm Success

The numbers were record setting and the post-Annual Meeting comments were positive, but until the survey results are in you can't be sure of the outcome. Those results recently became available, and attendees at the 24th Annual Meeting have rated it a huge success. The feedback also provided great insight into opportunities for enhancement, as AEMP gets ready to celebrate its 25th Annual Meeting.

Some major statistical highlights:
- Conference Rating: 94% Good to Excellent
- Plan to Attend 25th Annual Meeting: 92% Yes

Some comments from the post-Annual Meeting survey:
- Keynoter Phil Hoover was a home run! I hope AEMP has him back.
- I thought it was great. Need the seminars, the education and networking time.
- I believe that the AEMP Conference & Annual Meeting are on the right track, with high caliber presentations by top-notch folks. Continue the topical presentations that address current trends in fleet management.
- Continue with the excellent training. The sessions were very informative and now I want to pursue my CEM.
- I really enjoy the chance to interact with my peers.
- More of the same type of classes and speakers. It was all very well done.
- Some suggestions for future session topics:
  - Emission issues and current or upcoming regulation changes
  - New equipment products from OEMs
  - Auction strategies
  - USDOT regulations roundtable
  - Specification writing
  - Communication of ideas to upper management
  - Interviewing and evaluating skill sets that are needed for your team
  - Equipment availability and how to determine a core fleet

Thanks to all that responded to the survey as this information will help to make the 25th AEMP Annual Meeting and Conference more valuable to all of its attendees.

Foundation On-Line Auction To Benefit CEM Project

Need a new truck? Need other equipment that you're going to be purchasing in the next year? Well, if you can wait until February 2007, the AEMP Foundation in conjunction with Iron Planet will be holding an on-line auction for the benefit of the CEM project.

The goal is to raise $250,000 with the proceeds going to the CEM Commission to fund a rewriting and organization of the current CEM curriculum. This initiative will make the Certified Equipment Manager designation even more relevant to the fleet asset management profession and guarantee its ongoing accreditation.

“International stepped up at the 2006 Annual Meeting and offered a truck to jump start the auction concept and Iron Planet has agreed to facilitate the auction prior to the 25th Annual Meeting,” says Bob Decker, Chair of the AEMP Education Foundation. “We have a three-year plan to raise the $250,000, and this generous offer from International, Iron Planet and the other AEMP supporters that will participate is a great start to reaching our goal.”

“International is proud to take the lead on this critical fund raising initiative for the CEMI and AEMP,” says Bill SIXsmith of International. “The quality and relevance of the Certified Equipment Manager designation is critical to our industry partners, and International appreciates the work of CEMs everywhere.”

Be looking for more auction information on the AEMP website, through e-mails, and in upcoming editions of Equipment Manager. The auction will take place two weeks prior to the 25th AEMP Annual Meeting and Conference. Results of the auction will be celebrated during the annual meeting.
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EEEMP’s Chapters
Network with fellow leaders in the equipment-management industry. Invite your staff to participate in learning best practices in equipment management. AEMP chapters are a wealth of information and education. They welcome involvement by members and nonmembers alike.

Baltimore/Washington Chapter
President: Ed Gestido; Gray and Son; 410/771-4311, egestido@grayson.com
The Baltimore/Washington chapter meetings are held the 2nd Tuesday of the month; July is the Annual Crab Bust. RSVP is required for all meetings.

Cajun Chapter
President: Mike Bates, CEM; Cajun Constructors; 225/753-5887, mbates@cajunusa.com
For information about chapter meetings, please call Mike Bates at 225/753-5887.

Central Illinois Chapter
President: Dan Augustin, CEM; City of Bloomington; 309/434-2323, daugustin@cityblm.org
The Central Illinois Chapter meets the first Tuesday of the month, unless otherwise noted.

Central Indiana Chapter
President: Alan Houk; Irving Materials, Inc.; 317/452-6593; ahouk@irmat.com
The Central Indiana Chapter meets the third Thursday of each month except for June through August when there are no meetings. Dinner and program cost is $10 + 1%.

Central Ohio Chapter
President: Tom Pabst; Guttmann Oil Company
614/890-6406, tpabst@guttmannoil.com
The Central Ohio Chapter would like to invite anyone interested to attend our meetings on the third Wednesday of the month.

Florida Chapter
President: Joe Miller; Miller Bros.; 407/468-1814, jmiller1694@cfrr.com

Northeastern Ohio Chapter
President: John Ogden; Waste Management
216/866-3295, jogden@wm.com
The Northeastern Ohio Chapter meetings are every second Tuesday of the month at 6:00 pm, from September to May.

Pittsburgh
President: Ed Poston; P.J. Dick/Trumbull
412/205-1500, eposton@trumbullcorp.com
The chapter would like to extend an invitation to anyone who would like to attend the Pittsburgh Chapter meeting held each month.

Tri-State Chapter
President: Ron Hutchison, CEM; Barrett Paving Materials; 513/554-4684, rhutchison@barrett paving.com
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 subscription rate for members is $30, which is included in the Association’s annual dues. The U.S. subscription rate for non-members is $75 for one year and $140 for two years. Canadian subscribers add $5 per year; all other non-U.S. subscribers add $10 per year.

POSTMASTER: Send address changes to: Association of Equipment Management Professionals, P.O. Box 1368, Glenwood Springs, CO 81602.
Membership Has Its Benefits

Marilyn Rawlings, CEM, and the current president of the Association of Equipment Management Professionals, came into the equipment asset 12 years ago with good knowledge of cars and trucks, but heavy equipment was new to her. She needed education and a peer group that would share their knowledge and experience; she became a member of AEMP.

"AEMP opened the door to knowledge in heavy equipment and so much more; I got to learn from the best of the best and it made me better," said Rawlings. I joined AEMP for education and the ability to improve myself. I found in AEMP the resource for heavy equipment education."

For Dan Augstin, CEM, and co-chair of the Certified Equipment Manager Commission, quality was more important than quantity. "AEMP is a bit smaller organization with a real focus on fleet asset management. There is a true sense of camaraderie and a lack of cliques. Thanks to the "Equipment Triangle," all aspects of the fleet asset management industry are involved and frontline people from all aspects of the profession are available as a resource."

As the Association of Equipment Management Professionals prepares to celebrate a quarter century of providing leadership, education and connection for those in the fleet management profession, there is no better time to join. Go to www.aemp.org and take a look. You'll find a world of education and connection as well as an online membership application. Join AEMP and help us celebrate 25 years of excellence and leadership.

Save the Date!

Make plans now to attend AEMP's 25th Conference and Annual Meeting.

Jacksonville was a record breaking success! Feedback on the educational content and opportunities to learn from the best in fleet management business made Corpus Christi a must for the 2007 budget. Go to www.aemp.org for more details.
Certified Equipment Management Institute Coming in October

You've been thinking about it. You've grown your professional knowledge and skills, but the timing just hasn't been quite right. Well, the time is now!

You and members of your team are encouraged to take the next step in professional accreditation by preparing now for the Certified Equipment Management Institute, being held Oct. 28 to Nov. 1 in Dallas. This is one of two annual opportunities to prepare and sit for the CEM exam, or retake sections from previous efforts. This is an opportunity to join the best in the profession.

The Certified Equipment Manager (CEM) designation is the only recognized standard for judging the qualifications of a manager of heavy off-road equipment or manager of municipal/government fleets. It is an attainable goal for equipment managers who want to be identified as exceptional. To achieve this goal, it takes personal motivation and dedication to professionalism.

According to Dan Augustin, CEM and co-chair of the CEM Commission, "the 16-part exam is truly a test over what the experienced equipment management professional already knows and does everyday. The Institute is a comprehensive review of the 16 core competencies covered in the exam, assisting the CEM candidate to be fully prepared prior to the actual exam."

"A title alone is not leadership; one has to earn leadership, and earning the CEM is a big step in that process."

— Marilyn Rawlings, President, AEMP

The competencies include benchmarking, risk management, lifecycle analysis, specifications, human resources and more. For a complete topic list, go to the certification section on the AEMP website, www.aemp.org.

Marilyn Rawlings, president of AEMP elaborated. "The CEM is a designation, not just a sign of knowledge attained, but of leadership and credibility. I did not feel I could justify being an AEMP leader without first earning my CEM designation. A title alone is not leadership; one has to earn leadership, and earning the CEM is a big step in that process."

To qualify to sit for the CEM exam, a professional equipment manager must have a minimum of five years of fleet asset management as well as supervisory experience. The potential candidates must submit an essay on why they want to be a CEM and a brief on the details of the fleet they manage.

Issues considered by the CEM Commission relative to qualification also include size of fleet, military experience, and involvement with AEMP and other industry organizations.

Upon acceptance to attend CEMI, candidates will receive a comprehensive study guide to allow for early preparation. The actual CEMI consists of 16 one-hour classes presented by industry experts that allow candidates a review of each subject area as well as ask for clarification of various issues.

Upon successful CEM completion, new CEMs will be invited to attend the annual CEM pinning ceremony at AEMP's 25th Annual Meeting and Conference in March 2007. New CEMs will also be recognized in the Equipment Manager.

For more information on the CEMI, including costs and deadlines, go to the certification section at www.aemp.org. Join the leaders in the fleet asset management profession — the best of the best.
Certified Equipment Manager

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 nonmembers, and a $40 application fee must accompany the application form. Applicants must be registered at least 30 days before the test date (no exceptions). AEMP was proud to present the Class of 2005 at the recently concluded AEMP Management Conference and 24th Management Meeting. Please consider being a proud member of the Class of 2006.

Join a distinguished group of peers nationwide who have chosen to attain this high level of excellence. The CEM designation is your key to enhanced professional stature. These Certified Equipment Managers were required to pass the new and improved Certified Equipment Manager Certification Program.

2006
Dan Beaver, CEM
Ryan Scott Bentley, CEM
Dan Bernosky, CEM
Terry Fox, CEM
Rodney George, CEM
Gil Gilbert, CEM
Larry Maready, CEM
Gregory E. Morris, CEM
Andrew Murad, CEM
Phil Picone, CEM
John Summerfield, CEM
Bradley S. Wright, CEM

2005
Dale Abbott, CEM
Michael J. Brennan, CEM
Steve Burleson, CEM
Robert Collett, CEM
Matthew S. Endlesey, CEM
Lorne Fleming, CEM
Steve Frazier, CEM
John Gray, CEM
David Greenlee, CEM
Chuck Hopfinger, CEM
Jeffrey Holt, CEM
Peter Huisenga, CEM
Carter LaFoy, CEM
Michael Lux, CEM
Randall Lykins, CEM
Mark R. Malnack, CEM
John McCorkich Jr., CEM
Tim Morgan, CEM
Troy Peterson, CEM
Marilyn Rawlings, CEM
Barry Schiouch, CEM
Paul Schmidt, CEM
Walt Shaw, CEM
Tom Stoner, CEM
Don Swasing, CEM
Richard Vonvolkburg, CEM
Richard Wosston, CEM

2004
Christopher B. Anderson, CEM
Michael A. Bates, CEM
Steve Bell, CEM
Richard J. Brannigan, CEM
Matt Bush, CEM
Bradley J. Bylsma, CEM
Richard Byrd, CEM
Deborah S. Clark, CEM
Patrick T. Crail, CEM
Rex Davis, CEM
Richard S. Deeds, Jr., CEM
David Dingey, CEM
David Doss, CEM
Robert Ermer, CEM
Todd Fulsom, CEM
Darrell Gregory, CEM
Grant Harrod, CEM
Kelly Hogan, CEM
Thomas Kelpe, CEM
A.A. "Randy" Kuhnhn, Jr., CEM
Larry LaBarbera, CEM
Robert Lang, CEM
Mark E. Lynes, CEM
Lewis Martin, CEM
Robbie Martin, CEM
Gregory Moore, CEM
Michael O'Brien, CEM
Michael Reischman, CEM
Randy Rendon, CEM
Brian Richards, CEM
David R. Schulhoff, CEM
John Sharp, CEM
Marcus Skaggs, CEM
C. Bryan Solieau, CEM
William Stanley, CEM
Michael Tenski, CEM
Ben Tucker, CEM
Carl Uhinick, CEM
Ervin W. Yahr Jr., CEM
Mike Zobel, CEM

2003
Robert Andrade, CEM
James Brohamer, CEM
Stephen Burton, CEM
Jonathon Chupp, CEM
Dan Delk, CEM
B.E. Denton III, CEM
Kent Field, CEM
Kevin Fritzinger, CEM
Paul Hays, CEM
Stephen B. Howard, CEM
Charlie Johnson, CEM
Terry Kader, CEM
Greg Kittle, CEM
James L. Landolt, CEM
Michael E. Lockhart, CEM
Richard Lower, CEM
Bradley Melcher, CEM
Karen Painecar, CEM
Robert Patterson, CEM
Tom Paulin, CEM
Leon M. Prillaman, CEM
Gary P. Rakes, CEM
M. Lee Shaffer, CEM
L.T. Williams, CEM
William Don Wright, CEM

2002
Jerry Adams, CEM
William Anderson, CEM
David Anderson, CEM
Theresa F. Anderson, CEM
Daniel Rees, CEM
James F. Brandon, CEM
Archer Caldwell, CEM
Richard Campbell, CEM
Charlie Caudill, CEM
David L. Coombs, CEM
Leigh Dennis, CEM
Levi Dungan, CEM
Joe Fiorelli, CEM
Stephen Green, CEM
Bruce Guggemos, CEM
Scott Holland, CEM
Carl W. Huskey, CEM
Ronald P. Hutchison, CEM
Warren Laing, CEM
Dale T. Leuer, CEM
Ken Mannon, CEM
Bryan K. Maul, CEM
Robert D. McClure, CEM
Penny Pietro, CEM
James B. Poirer, CEM
Raymond Peter, CEM
Michael C. Poorman, CEM
J. Chris Ryan, CEM
Pietro Scarfiami, CEM
Bill Sterner, CEM
Carlton D. Stevens, CEM
Don Walker, CEM
Pete Walsh, CEM
Judy Workman, CEM

2001
Thomas W. Atkins, CEM
Richard G. Bonistalli, CEM
James T. Brewbaker, CEM
James Conley, CEM
Greg Cox, CEM
Eddy Elliott, CEM
Herbert Gann, CEM
David Harris, CEM
Sam Houston, CEM
Terry Howard, CEM
Kevin Knaebel, CEM
J. Howard Mann, CEM
Calvin Martin, CEM
John L. Neckar, CEM
Tedd M. Perina, CEM
Erle Potter, CEM
John H. Puzenski, CEM
Samuel W. Relff, CEM
Tom Serfass, CEM
Don Sprouse, CEM
Rut Thompson, CEM
Lindsay E. Walker II, CEM

2000
David Allard, CEM
Dan Augsten, CEM
Brett Burgess, CEM
Don Caplinger, CEM
John D. Gaines, CEM
Guy Gordon, CEM
Dave Gorski, CEM
Nick Helms, CEM
Blair Kinke, CEM
Dave Markey, CEM
Charles S. Miller II, CEM
Kevin Power, CEM
Gary Smith, CEM
Richard Stanbery, CEM
Bill Underwood, CEM
Bill Vandervort, CEM
William J. White, CEM
Carl Wulf, CEM

1997
Ali Beamer, CEM
Frank Bull, CEM

1996
Gary Carpenter, CEM
Bill Cyford, CEM
Gary Dow, CEM
Robert Draves, CEM
Robert Gordon, CEM
Robert Turner, CEM
Dale Warner, CEM
Take Time to
Choose the Right EMIS

Though painstaking, the commitment to make the best investment is well worth the effort

By G.C. Skipper, Contributing Editor

The high wire that professional fleet managers walk every day is stretched tight between two poles. At one end is the necessity of serving customers well. At the other end is the need to do so at a competitive cost.

One of the most effective tools in helping fleet professionals keep their balance between the two is equipment-management information systems, a big-ticket item on the budget page that requires time, commitment and investment to implement.

"You cannot run a competitive fleet organization unless you have a really robust system," says Pamela J. Nelson, CEO of CCG/FASTER, Inc., whose customer base is comprised of 95 percent public sector fleets.

But not any management software will do, says Sidney B. Nice, sales and marketing director at Arsemault Associates. "If you're using an accounting system, it falls short in being able to give you the level of detail that is needed at an operational level," he says. Nice points to one multibillion-dollar customer that replaced its fleet vehicles based on accounting system data. When the system said the units were depreciated fully to zero value, the vehicles were replaced.

"The company [then] implemented a system called Dossier," says Nice, "and a year and a half later the data was analyzed. They found that they had been retiring vehicles about three years too early. The units that were the least costly to operate were the older units they had been retiring. In the first year after that, they didn't spend that $2,000,000 in capital investment that they would have if they had used their accounting system to make that decision."

Brad Kelley, vice president of information technology at Mercury Associates, says, "An equipment management system is definitely one of the factors fleet operators should use to make sure vehicles are available, safe and replaced on a cost-effective time

Track Industry Benchmarks

Over the years, a set of performance standards has emerged that help equipment professionals measure individual operations against industry best practices. When you select an EMIS, make sure the software can give you the information you need on the following industry benchmark criteria:

- Availability by department/class/year
- Comeback/rework report
- Mechanic accountability
- Fully burdened hourly labor rate
- PM compliance
- Preventive maintenance to repair hours
- Scheduled to unscheduled repairs
- Inventory turns
- Parts makeup by storeroom
- Equipment utilization by class
- Road calls by class and repair group
- Accident to maintenance and service costs by class
- Maintenance and service costs per gallon by class
- Warranty tracking
- Average labor hours to repair types by vehicle class
- Parts expenditures by class and repair type
- Administrative to shop floor staffing

Source: AEMP
measure. Yet for a lot of organizations, it's one of those misunderstood things. All they see is a large line item in their budget."

But an equipment management information system means different things to different organizations, Kelley says. "Some large state agencies tend to use them as data repositories to manage their inventory from a vehicle count and for costing-type situations; for instance, in cases where they want to know how much fuel they've bought or how much they have spent on repairs. They don't necessarily use the system for its work order capabilities."

Other organizations, he says, do use EMIS as a work order system as well as for scheduling vehicles for maintenance, parts inventory control, and vehicle replacement planning.

Regardless of how such a system is used, however, the first step in selecting the right one is a self-analysis of your operation. You have to determine the role of the fleet within the organization, Kelley says, and decide if it is a mission-critical part of developing service.

"Certainly, a fleet is much more important to a delivery-service operation than to a company where the fleet is not mission-critical but is only a second- or third-tier requirement," he says.

Another step in the self-analysis process, says Kelley, is to network with your counterparts in the industry to see what they are doing. "Also look at some of the industry's best practices, he says. "But, because somebody else is doing it doesn't mean it's the right thing to do for you," he cautions. "You need to understand what your internal needs are, create a functional matrix to put the needs on paper, and flesh them out. Highlight the ones that would be nice to have, but aren't necessarily mission-critical in your evaluation; find out what your industry counterparts are doing, and review industry best practices."

CCG's Nelson says to use experience when it comes to identifying needs. "A lot of times fleet managers are educated a great deal
through interfacing with some of the best fleet-information systems. They have been learning that from all of their customers for years."

The most important thing, she says, is to make sure of your objectives and identify your greatest opportunity to achieve results. "You don’t know unless you go in and spend a great deal of time in determining needs and result opportunities," she says.

Once you identify your needs, Nice says, be prepared to properly fund the system. "In the equipment-maintenance arena today, you have organizations that are still utilizing filing cabinets full of papers, and either they use a white board or a green board to keep track of their equipment," he says. "That’s like using a yellow pad and a calculator rather than a computer to run your business. Management would never imagine doing something like that at the business level, yet they are underfunding the maintenance organization. Because of that, they’re still using antiquated methodologies that are very burdensome and ill-equipped to run a business sufficiently."

**Guidelines to selection**

When it comes to actually selecting an equipment management information system, the world can be a confusing place. However, say the experts, there are certain guidelines you can follow to avoid costly mistakes.

First of all, select the members of the team who will help in the decision-making process. "Don’t make the mistake of considering position only," Nelson says. "You want the most experienced people and you want someone with the right attitude. Don’t select a negative person, but someone who is innovative and open to change."

In addition to people knowledgeable about fleet operations, maintenance, and parts inventory, also include someone from the IT department to make sure the system interfaces with existing systems. Also include someone from finance, since they will be paying the bill.

"Be sure you get the best people on the team to select this tool," Nelson says, "because this is the most critical tool you have."

Arsenal’s Nice says team members typically will be the people who are responsible for operating the fleet — vice president of operations, fleet director or manager — as well as people who are responsible for making sure the equipment is operating — shop foreman and head mechanic, for instance.

**EMIS Benefits Without Breaking the Bank**

Any way you look at it, purchasing an equipment-management information system is a big-dollar line item.

Within the past three to five years, according to Brad Kelley, vice president of information technology for Mercury Associates, an alternative method of reaping the benefits of EMIS without straining your budget has evolved: application hosting.

Not only are small companies with limited finances using application hosting, he says, but also some large corporations that are looking for ways to maximize their profits.

"Quite often, bigger corporations find that it is more cost-effective to outsource this service rather than to get into an application that is somewhat specialized," Kelley says. "They stick to doing things like financial management, web servers, e-mail and things that are more of their core competence. They allow niche-type applications, such as fleet systems, to be out-sourced to experts in that area."

More and more organizations are going in this direction, Kelley says, for a number of reasons that range from economic to situations where the fleet is low man on the totem pole. "By going to application hosting, the fleet gets priority level from a vendor that guarantees performance measures. Internal IT departments typically don’t have that."

Here’s how application hosting works. A software vendor develops its own fleet software and offers a hosting service along with it. "For example," Kelley says, "you may decide you can’t afford to get into the package as a stand-alone purchase. So you sign up for the software vendor’s application hosting service. You’re not actually purchasing the software, you’re renting it. It’s similar to leasing." The data belongs to the fleet operation that is renting the service, Kelley says, but not the software.

"The vendor is responsible for maintaining both the software and hardware," he says. "All you’re doing is showing up at the doorstep of the vendor’s portal, connecting and using the software. Everything else works the same."

All a company needs to take advantage of application hosting is a computer that has a web browser and Internet access. "If you have that, you’re pretty much ready to go," Kelley says. "In fact, the level of PC that you need is fairly low because the application and processing of the application are all done by the vendor, not the client’s work station."

Kelley identified several vendors now offering application hosting, including CCG Systems, Chevin, Collective Data and MRO Software, among others.
When the team meets to consider how to go about selecting the right system, they need to understand what it is they expect to get out of the system, Mercury's Kelley says. "Are they going to use it as a work-order system? What kind of reports do they expect to get out of the system? The type of information they need from the system should be outlined first," he says. "There are different levels of need. Large state organizations may not need work order modules, but they need strong reporting for vehicle-replacement planning. That eliminates a lot of unnecessary expense."

Kelley recommends that the company go through a "fix gap" analysis and look at standard fleet-information system functionality. "Check off the items they need and the items that would be nice to have," he says. "The final matrix defines what their needs are, so when they go out and look at an information system, they can use the matrix as a kind of report card to go through the selection process. They can also make it part of the request for proposal and show it to vendors who want to respond to the RFP."

"The thing that has made the greatest difference in how you utilize a system is how much support comes with it," Nelson says. "Does the vendor give you a system and say, 'Here's the manual. Go to it.' Or does the vendor offer not only fleet support, but technical support?"

Fleet professionals need to look for a company that offers intensive support to start up, she says. "Too often customers will say, 'we don't want to track that' only to find when they're using the software that, yes, they do need it. Then they have to retrofit. Go ahead and put those codes in. Although you may not use them now, you will later."

Also look for a company who's system interfaces with existing systems, she says. "There is no single fleet system. If a vendor says they can develop every single thing themselves, or if they tell you implementing a system doesn't require a lot of effort and is a piece of cake, run the other way."

The selection of hardware for an equipment-management information system isn't difficult, according to Nice. "Today's hardware, more or less, is a commodity. The computing environment is pretty static — standard PCs, standard Windows operating environment, and standard network environment. As long as you pick a good vendor, in the first tier of hardware providers, you should be fine."

Selecting software, however, is another scenario. First and foremost, Nice says, choose a company that has the wherewithal to support you, a company that is in the business, has been in the business, and understands the business that equipment maintenance demands. "The software must be able to be used by multiple people within your organization," Nice says. "If the system is too complex or complicated, the typical front-end people won't use it, so money is wasted. A critical aspect is that the less-experienced people need to be presented with a system that is easy to use. Otherwise, they won't use it."

One of the biggest mistakes fleet professionals make, he says, is not investing in service support training and getting the system up and running with trained personnel. "Very often the IT organization spends money on the software and then either underfunds or doesn't fund training services at all. Ultimately what you get is shelf ware. The system is not being used."

Kelley concurs. "You have pre-production training and post-production training and support," he says. "Make sure all this is well defined and broken out. Make sure there are dollars in there for project management. Be sure you have a project manager from the vendor side as well as a project manager counterpart within your organization. They are going to have to be able to work together."

Be sure you understand how the vendor will deliver these services, Kelley says. "Understand what you get for your dollar. Some vendors say they will give you 'X' number of training hours and then they'll do it remotely, such as through a conference call or a video session. If you look at their contract, they are perfectly within the scope of the contract. Spell out that you expect the training to be done on-site, for example. These are the kind of details that can wind up being the stick in the wheel."
Nelson also suggests equipment managers check references. "You have to know what questions to ask and you have to document claims," she says. "Many times you'll hear, yes, we do that and we do this and, yes, we can do that. What you need to ask is, 'Show me how you do this.'" And, she says, "don't let the vendor come in and show you what they think is wonderful about their system. You need to be in control of the process. You need to spend time saying show me exactly how you do that. Leaving it up to the vendor is a real pitfall."

And finally, Nelson says she doesn't know of any fleet manager "in the entire world who says an enterprise system is better than a stand-alone system." Company-wide systems, shared by all departments, do not meet fleet-maintenance needs, she says.

"How important do they treat you now," she says, "are you really No. 1 on anybody's list? Do you really think you're going to be No. 1 over finance or human resources?"

Although she admits there are times when fleet managers are mandated to use corporate-wide systems, "you should document what the system does not do and be strong enough to say, 'I've done what you told me to do, but now you want this information, but I absolutely can't get that out of the system.'"

Enterprise or stand alone, EMIS is a critical management tool, critical in some ways management might not realize. Nice says it plays an important role in keeping good people. "Very often the ability to retain some of your best people has to do with giving them the right tools to do their jobs in the most professional way possible."

EMIS, he says, is one of those "right tools."

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**Don't Trip Over These EMIS Stumbling Blocks**

When fleet managers decide to select an equipment-management information system, upgrade or expand an existing system, they need to know what pitfalls to avoid. Here are five stumbling blocks that could trip you up:

- **Don't let others make your decision.** Everyone — sometimes rightfully so — wants to get into the act. The finance department wants the system to accurately crunch numbers, streamline forecasting and perform other financial functions. Important customers want to make sure the system doesn't deteriorate the service they are used to or overall such things as timely distribution. IT people will demand that only a certain hardware platform, operating in a specific environment, can accomplish what you've set out to do.

  In short, don't be intimidated by departments that appear more technically-oriented than you. It's easy to give in and let them have their way, but stay focused. The goal is to run a competitive fleet operation. Keep in mind that the open systems and muscle-bound databases of today's technology make it possible to integrate any platform into an existing technology environment. Just do your homework, learn more about EMIS technology, and that will enable you to understand your options.

- **Take old ideas out with the trash.** The initial search for an EMIS often takes a fleet operation down a familiar road. The company defines its needs by how it operates now. Even if you have a well-run operation, this mistake can be limiting. What used to be the industry standard in fleet software, for instance, has been left behind in today's technological quantum leap forward. More powerful hardware and software allow fleets to track and measure information that wasn't accessible before. Keep an open mind and you'll discover re-engineered processes that can better service customers.

- **Perhaps the biggest mistake fleet operators make is not checking references from the vendor closely enough.** Talking to "happy users" about how long they've used the system, do they like it, and did the system provide the type of information they wanted doesn't get the job done. Some experts say it is irrelevant. You'd be better served to ask how much money the user has saved since installing the system, how benchmarks have improved, and what changes in the delivery process have occurred as a result of the software. To make sure you don't get sidetracked during the reference check, go into the conversation armed with a list of carefully prepared questions.

- **Stay away from the flirty-girties.** Technology has advanced so rapidly that many fleet operators are wowed by features and functions. They want every new gadget that's available just to say they have an EMIS that is the latest, most up-to-date version on the market. The danger in this approach is that you are apt to buy technology that doesn't necessarily accomplish your goals or improve your performance numbers.

- **Don't wait too long to make a decision.** You can take months, or even years, to wade through the detailed process of buying new information management software. The only way to stay competitive is to shorten the decision cycle. Don't allow the purchasing department or legal department to slow you up. Slow decision-making can be strategically dangerous.
The Art of the Entry

Sam Houston was determined to win recognition for his fleet. His eye-catching entry illustrated its excellence.

By G.C. Skipper, Contributing Editor

The first two times Sam Houston, CEM, division chief, field management for the City of Jacksonville, Fla., entered the Fleet Masters award competition, he knew beyond a doubt that the data, benchmarks and measurable improvements he had gathered would be hard to beat.

“We were as good as anybody in the country,” Houston says, “I didn’t see how we could lose.”

On both occasions, however, Houston came in second. Baffled, and even more determined to win, his first thought was, “Hey, we’re doing something wrong here.” He looked again at his most recent entry, which totaled about four or five pages, and again reviewed the process of pulling together the necessary numbers to accurately convey just how much the municipal fleet operation had improved since he had taken over as division chief.

During his reevaluation of what he had submitted, he realized that entry forms alone did not really show what was happening. Like any other competition, entries had to be prepared in such a way as to be judged. They had to be gussied-up a bit. “The judges go through several applications, so I figured our entry had to be displayed in a manner that would be presentable and eye-catching,” Houston says.

The basic message Houston wanted to deliver, he said, was, “Here’s what happened, and this is dynamite.”

Houston entered the Fleet Masters award competition for a third time, but he made some changes. He livened up his entry with bar charts and graphs and visual treatments that demanded the attention of the judges through sheer professional, attractive and in-depth presentation.

“We ended up with a booklet that was at least half an inch thick,” he said. “It totaled 50 to 60 pages bound in a ring binder as opposed to the four or five pages we had submitted in previous years.”

The third time was a charm. Houston won the Fleet Masters award, an accomplishment, he said, that “recognizes the best practices of fleet operations. You are judged against other fleets, and the award says you’ve come out on top.

“It’s not good enough to say I saved so much money here and so much money there,” he says. “You have to go one step further and present it in a professional manner. You have to document everything you submit.”

For example, Houston showed how he had reduced, over a two-year period, the budget allocated for sublet repairs, that is repair work sent outside to be done. The budget amount spent dropped
from $3.2 million to less than $1 million, he says.

He used bar charts to show each year’s decline. “For instance, heavy-duty brakes started out at $77,000 a year for outside repairs. We broke that down again and it went from $77,000 to $1,000 a year. By using bar charts, we showed that the budget went down to one level the first year, down to a lower level the second year, and so forth,” he says. “You can read numbers, but it doesn’t show what’s really happening. The bar charts showed that.”

When it came to showing measurable improvements, he zeroed in on turn-around time for vehicle repair, that is, how long the vehicles were out of service.

“We have 5,400 pieces of equipment, so that at any given time we have several hundred units in the shop that we are working on,” Houston says. He decided to schedule all repairs, in addition to PMs, rather than have people come in, drop off the equipment and wait for it. “When you do that,” he says, “you’re overbooked one day and have no work the next. When a unit comes in here, and all we have to do is a safety inspection, we turn it around in two hours.”

Scheduling has allowed him to reduce repair time for heavy equipment and everything else, he says. “A vehicle gets repaired, and then it goes to our quality control area. There it is inspected and if something is wrong, it’s returned. We measure that. We’re measuring efficiency.” Since returns are costly and waste time, Houston set out to reduce that number as well. It dropped from a six-day turnaround to less than three days.

As impressive as fleet operation numbers may be, Houston again emphasized, if you’re going after a Fleet Masters award, you shouldn’t present only the information as called for by the application.

“Our presentation was killing us and I knew we had to beef it up,” he says. “Although there’s nothing in the rules to keep you from going outside and having the presentation done, we put ours together ourselves. I have an assistant who is really good on the computer, and he went to work on it. Every area on the application was documented with backup materials. All the charts and graphs were done in color.”

Houston encourages any fleet manager to enter the Fleet Masters because, “it makes you analyze your operation. When you go in and look at what you are going to put on the application, you discover areas where you need to improve,” he says. “It actually gets you to evaluate your business internally and makes you do a self-analysis of your own outfit.”

He offered these guidelines for fleet professionals who want to become Fleet Masters. First, take the application and look it over to see what’s required. Then look at your own operation and ask, am I competitive here? Have I made that much improvement in the past three or four years? What can I show that I’ve done in the past three or four years that has me moving in the right direction?

“You have to have mechanisms in place to judge and evaluate yourself every few months,” Houston says. “If you don’t have those types of things, you’re not going to look like you’ve improved — and that’s the key. You have to make constant improvement.”

Every time he tries something new that will improve his fleet operation, Houston says, it creates

“It’s not good enough to say I saved so much money here and so much money there. You have to go one step further and present it in a professional manner. You have to document everything you submit.”

– Sam Houston, CEM

more work for his personnel. “They keep saying, why don’t you sit back and not do anything?”

But that’s not Sam Houston’s way. “When you sit here and look at your business and run it like a business, you’re always looking for ways to improve it,” he says.

“Every dollar you cut off expenses is a dollar earned.”

And then he said what his staff probably did not want to hear. “The next thing I’m looking at is manufacturing my own biodiesel,” he says. “I already have the only ethanol station in northeast Florida, so I’m using that. With biodiesel I can save the city about $1.50 a gallon, and I can buy a processing plant that already exists for $10,000. So that’s what I’m looking at right now — collecting used cooking oil (used in the process), buying the plant, and starting my own biodiesel manufacturing.”
Remote Technology
An Information Net

Laptops, hand-helds and digital cameras give managers eyes in the field that deliver data for centralized decision-making

By G.C. Skipper, Contributing Editor

You’ve heard of remote diagnostics, that is, using hand-held devices, digital cameras and laptops to locate field equipment and determine performance. But Greg Kittle, CEM, equipment operations manager for Ryan Incorporated Central, says there is no such thing as remote diagnosis.

“I look at remote diagnostics a little differently,” he says. “You can’t diagnose anything since you are looking only at error codes and events that are past history. You’re not looking at any prognosis data. I call it remote data gathering, not diagnostics, and we do a lot of that.”

Kittle says true remote diagnostics is “pretty spotty.”

“There are no standards to identify different manufacturer signals,” he says. “Whatever kind of signal a machine is capable of delivering to the ECM (electronic control module) — for example, a temperature signal — will be pushed across the can bus. But unless you buy the OEM’s specific box, you can’t interpret the data. There are no standards for that, so that’s a huge frustration for us.”

Kittle says Ryan does not purchase a manufacturer’s box because it wants to retain ownership of the information. “We don’t mind sharing that information with them,” he says, “but we want to retain ownership.” Instead, Kittle uses the manufacturer’s software and analyzes the data with a laptop.

In addition to laptops, Kittle uses tools such as Symbol 97 hand-helds and Nextel phones to ride herd on 800 pieces of heavy equipment; 1,200 fleet support units; and 40 to 45 technicians. The entire equipment department, he says, uses the specialized handheld devices for all its tasks: time sheets, logistics, preventive maintenance scheduling and coordination and parts ordering, for instance.

“We have written all those programs for Nextel phones,” he says. “Our suppliers and customers use these devices as well for such things as automated logistics or fuel data capture. The handheld devices are like a hardened PDA, only with more functionality. Within the device is a bar code and a receiver that runs on a Windows mobile platform that our software is written in. That interacts with our main management software, which is web-based. There is also a digital camera within the handheld device that can be used to send back images of damaged equipment or equipment being used for something that it was not designed to handle.”

In effect, Kittle says, what Ryan has done is take decentralized

“We know what [a machine’s] health is, precisely what our costs are, and that information provides a format so we can view total life cycle, which is what we are interested in.”

— Greg Kittle, Ryan Incorporated Central
Technology Builds Network

Ryan’s eyes are on the horizon.

As such, equipment actions and centralized the software the department uses. “All the folks who use to move equipment can still do it, but now all the information is shared instantaneously with everyone in the company,” he says. “Electronic work orders are also sent with an electronic job map and instructions. That expedites the process and eliminates the need for tracking equipment location manually.”

Kittle decided to use Nextel phones because of their prevalence in the construction business. “We have them; our suppliers have them. We decided to use them so there would not be any additional costs for a supplier to move over to our system.”

Symbol 97 units add to the capabilities of the Nextel units. “They now have automated purchase orders and equipment repair history because Symbol has a lot more memory and is more robust,” he says.

All the programs that Ryan uses have been written in several different software languages: Java, which Nextel phones use; Pocket PC; and Palm OS. This allows anyone who has any kind of handheld device to use the software.

For instance, the company uses a lot of contract labor and requires vendors to fill out time sheets for accurate costing. They can either use Nextel or laptops to do time sheets online,” Kittle says.

Once the data are gathered, Kittle says they are able to see “a prognostic view of the machines—how they are running, and what’s happening to them.” Other data, such as machine pricing and current value add to the overall picture. “We know what its health is, precisely what our costs are, and that information provides a format so we can view total life cycle, which is what we are interested in,” he says.

Kittle has other issues with remote diagnosis, in addition to the lack of standards for manufacturers. “The boxes that provide the gateway, the modem to send the information, comes in different types of platforms,” he says. “One uses GSM, another uses CTMA, some are analog, some are digital. That’s kind of a strange circumstance.

“Also, the phone carriers have not recognized that data is being transferred, not voice. They have to reconfigure their plans. The carriers have not responded to the Qualcomms and others to package this more appropriately for the construction industry. The data transfer is what I’m interested in, not voice.”

If the plans were reconfigured and packages were much more flexible, “we would send far more data across the network,” Kittle says. “We could analyze the machines on a minute-by-minute basis.”
Bob Decker, corporate equipment manager for P.J. Dick/Trumbull, decided five years ago to use remote diagnostic tools in his management of 20 technicians and a fleet of 480 vehicles.

He equipped all his technicians with laptops. "It makes technicians a lot better," Decker says. "They can diagnose the problems and get their jobs done."

Laptops allow field technicians to look up the parts they need for repairs and order them from the field for direct shipment to the site. "Rather than carrying around 10 or 12 books, they just go online and key in the parts they need."

Without question, Decker says, the benefit of remote diagnostic tools is saving time. Technicians also use digital cameras to show such things as equipment damage.

He says the trend is toward web-based programs. "Caterpillar, for example, used to have a software package where you bought the DVDs for parts," Decker says. "Now they have gone to web-based, so for a fee, we access the website. All manufacturers are headed this way, and the access fees vary."

Decker says his company has slowly moved to remote diagnostics over the past five years. "We're up to nearly full speed now," he says. "Some of my technicians say they wish they had had laptops 10 years ago when they were younger."

Rick Bloom, national sales manager for OEM Controls, holds a broader view of remote diagnosis as a supplier of "electronic solutions."

Most of the remote diagnostics being utilized in the field today, he says, moves in one of two directions. They are used to enable a technician to diagnose machine problems in the field via electronic control modules used by manufacturers to transmit codes that help the technician figure out what's wrong with the machine. The second use is to bring information from the machine to either the end user, dealer or manufacturer.

"These things can be utilized with digital cameras for damage assessment or to determine potential abuse of a machine," Bloom says. "Such technology can also capture diagnostic information that can be as simple as doing paperless transactions of how a machine is performing in the field."

This capability is particularly important with today's shortage of technicians, he says. "It gives the guys more time to turn wrenches and spend less time doing paperwork."

Numerous programs are available today that allow technicians to report back to the home office on what has been done to the machine, how long it took to repair, parts that were needed, and work orders — all by eliminating both the paperwork and the nightmare of processing information that a technician brings from the field, according to Bloom.

With the device from OEM Controls, he says, "the history of the machine travels along with it. "Whatever technician comes to the machine or, in some cases, if the machine goes to the manufacturer or if it's sold or moved from job to job, the service technician can see what was previously done to it as well as who did it. This gives them a base to begin diagnosing additional problems," Bloom says.

Laptops, cameras, handheld gadgets, and all the tools have the capability of doing things faster and more accurately, and they complement what already exists in the shop, where many end-users and dealers have software in place.

"What we're providing is a feeling mechanism to the tools that are already in place," he says. "For those who do not have an existing system, we have software capabilities that will give them the information they need at their fingertips in a virtual real-time situation. All we do is provide those software packages with information. If you don't have that, we have the capability to set up a stand-alone system."

Kittle describes information management as "a kind of last frontier in regards to productivity improvement."

"Information management is affordable," he says. "When you integrate it three dimensionally with your suppliers and your customers, you can spread the cost savings throughout the entire network. In my viewpoint, this is the last frontier of big productivity gain."
GETting the Right Balance

Ground-engaging tools must offer strength and durability to provide peak production

By G.C. Skipper, Contributing Editor

Ground-engaging tools, or GETs, are a challenge of balance in material and design. Materials must be wear-resistant with hardness, yet tough enough to take impact.

"Ground-engaging tools are not just a piece of steel that sits out there and is priced at X number of dollars to be competitive in the marketplace," says Kirk Yoresen, marketing communications manager for Esco. "It doesn’t do any good to save 20 percent on the purchase of a ground-engaging tool if it winds up costing more to operate because of shorter wear life."

Each component of a digging system in mining or construction serves a different purpose, and the composition of each piece is balanced to create a working tool, Yoresen says. The bucket lip is a structural component. It needs to have wear capabilities, but it is primarily structural. Then the adapter or shank that attaches the teeth to the bucket, "is kind of a structural component, but it has to take a tremendous amount of toughness and wear life to go along with just attaching to the bucket," he says. The shank would be made of a different material. Then there are the teeth, which are made of an even harder material. "But they also must have toughness to withstand impact."

"Each of the materials of these components is different, depending on whether or not an item is welded or mechanically attached in some way."

To prolong the wear components’ lifecycle, Esco and other manufacturers have begun to move toward carbide-impregnated wear surfaces "laid on by various processes that involve subsequent heat treating," says Yoresen. "They are more expensive, but they do reduce your down time. Rather than changing teeth once every month, you’re increasing that two or three times."

Balance in materials must also be seen in relation to machine performance, says Bob Klohnak, senior product consultant for Caterpillar Ground Engaging Tools Division. "In order to get longer-wearing components, you have two primary choices: Make it harder or make it bigger," he says. "Most material development to date has come about as far as it can in material hardness properties in the base piece itself. Of course, bigger frequently can be negative to the productivity of the machine."

"At Caterpillar, we spend a good deal of our effort in trying to balance the wear-protection element of the GET with the effect it has on machine performance. Making something bigger to last longer is sometimes not a good idea, depending on how it affects the productive capability of the machine."

Jason Simmons, a ground-engagement tools engineer for John Deere; and Dana Klostermann, product manager at Deere’s marketing service group, say that the way components are manufactured has changed.
"A lot of manufacturers are now using parts from castings that previously were forged," Simmons says. "The movement toward castings is because forgings are more expensive, so there is an economic motivation, and improvement in casting quality has closed the gap on performance." This shift, he says, has occurred over the past three to five years.

Kenco has seen the results of these material changes, says operations manager Tracy Black. "We don’t actually manufacture any teeth ourselves, but we do see quite a variety of teeth and shanks out there for our customers," he says. "Tooth manufacturers are constantly looking at bettering their products and offering more specialized teeth for certain applications, whether you’re digging in rock, clay, sand or whatever. There are more and more options every year, and as manufacturers make teeth to last longer, customers are more productive and make more money."

Many design changes in GETs have been brought about by end-users. "People call in with really good ideas for specific needs, and this turns into engineering that designs something for that customer’s specific needs," Black says. "Eventually that idea becomes a product that’s available to everybody."

Preference for one system over another varies as much as the customers themselves, says Deere’s Simmons. "Customers may have other buckets in their fleet that have a particular style system," he says. "For commonality purposes, they would select one system over another. Customers look at different cost associated with different systems, and each of those systems range in different sizes. Bigger machines require a bigger system. They need to know the breakout forces of their machines and make sure they have the right system size to match the size of their machine."

Deere identifies six basic retention systems to enable an end-user to determine what manufacturer or adapter or tooth they are using.

- Pin and washer. On a Caterpillar-style replacement system, according to Deere, a pin and washer, or split washer, goes into the adapter before the tooth is slipped into place. You insert the washer, slide the tooth on and pound a pin through that. It also has a groove that lines up with the washer that retains the tooth.
- Flex pin system. These are common on replacement teeth used on John Deere backhoes, for instance. The flex pins are two steel forgings that have a neoprene rubber in between. "It looks like a sandwich," Simmons says. "As you pound the pin through, it squeezes the
neoprene and that holds the tooth up on the adapter.

- Roll pins. This looks like a steel coil. The pin is pounded down through the top rather than through the side. Roll pins are traditionally used on Hensley style systems, according to Deere.
- Steel key. This style is used on bigger Hensley systems. Once inserted, the key has to break a tab to remove it.
- Esco's Quadrilok horseshoe-shaped pin. The tooth does a quarter-turn twist to get on the adapter, according to Deere. The horseshoe prevents the tooth from twisting back off.
- The Esco-style Super V system.

This is similar to flex pin, but instead of being pounded in horizontally, it is pounded vertically at the very back corner of the tooth.

Yoresen says Esco has "always prided ourselves on quick change. But in addition, we and the industry are moving toward improved safety. And that means we are moving toward hammerless design. A wear component can be changed without the use of a sledge hammer or pin or any other type of tool.

"Hammerless design is not easy," he says. "You want something that is easier to remove, but you want it easy to remove only when you want to remove it. You want it to stay in place, and that is the design challenge today."

Caterpillar's Kloblak concurs. "Our K Series is hammerless in the larger sizes where it makes more sense," he says. "Vertical orientation of retention generally makes it easier to remove and install, especially on close space adapters, such as those on an excavator. On a large loader, where the adapters are spaced further apart, whether it's vertical or horizontal accessibility is less of an issue, although removing the vertical retainer is usually still easier."

Application determines what profile tooth to use, according to Simmons, and he identifies four general profiles that seem to cut

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**GET Gallery**

**John Deere**

Fanggs teeth have an exclusive, curved surface profile that permits digging with up to 23 percent less effort than standard teeth. The design, for general-purpose and heavy-duty applications, is said to cause material to break up more easily providing better bucket fill and cycle times. With greater wear resistance, Fanggs can absorb more impact. It is available in two profile designs, one for digging and one for loading, and it fits Deere and most competitive equipment.

For information visit [www.johndeere.com](http://www.johndeere.com).

**Case**

A wide selection of buckets for wheel loaders, excavators, skid-steers and other earthmoving equipment is available. Case's dealer network helps end-users select the right bucket for the machine and for the job. Choice of teeth and bucket edges to meet the demands of most jobsite conditions is available.

For information visit [www.casece.com](http://www.casece.com).

**Esco**

Super V earthmoving tooth system features easy to install and remove pins that allow quick point changes for reduced downtime, the company says. Improved penetration, loading and reduced fuel consumption is due to slim profile teeth. A new looking surface with each point change is said to provide optimum point retention.

For information visit [www.escocorp.com](http://www.escocorp.com).
across all the different systems.

The standard profile tooth has a general profile used for usual digging applications, such as dirt. It is not a high-impact tool, but is just a good digging tool that wears adequately, Simmons says.

The flare-style tooth, instead of being straight at the end, flares out to create a second lip on the bucket and add capacity, Simmons says. “This is good in loose material like sand or dirt. It adds extra capacity and the material is already broken up, so you don’t need it for penetration.”

The tiger profile has pointed teeth. These would be used on center adapters of a bucket. Twin tigers, which have two points, would be used on the ends of the bucket, says Simmons. “These teeth are used in frost or hard compacted ground where you need penetration. They are used either to penetrate hard material or to break through it. Some customers use tiger and twin tiger teeth for breaking rock,” he says.

Abrasion teeth are for customers working in sandy or rocky conditions who need extra wear material on the front point end of the tooth.

Caterpillar’s K Series features entirely new shapes, Klobnak says. “New shapes come with new names or new series. For us, our K Series features all new shapes. The teeth last longer and penetrate better. Usually, you can equate sharpness of the tooth with its ability to penetrate.”

A longer tooth can provide more wear material and more penetration, he says, but there is the balancing factor again — you have to balance length against strength. “The longer you make a tooth,” he says, “you can affect the strength. And you affect the breakout or performance of the machine itself. All of that has to be balanced.”

The industry seems to be emphasizing the performance of GETs, Klobnak says. “The trend today is not only to protect, but to have a productive system and maintain the productivity of your tool work as your GET wears.”