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reau of Parks in Howard County, MD, a post he held until being named director Department Recreation and Parks.

Bourne, who graduated from the NRPA Park Management School at North Carolina State University, received PGMS's highest honor, its Gold Medal, in 1996. Only 14 people have received one since the first was given in 1926.

"He (Jeff Bourne) is a very conscientious person, and a person that does an excellent job with whatever he sets out to do," says Earl Wilson, Loveland, Ohio, a fellow PGMS Gold Medal honoree.

Jeff is married to Barbara Jacob Bourne, and they have two sons, Nathaniel and Evan.

LAWN CARE CATEGORY

Dr. Roger C. Funk , architect of The Davey Institute of Lawn Sciences, says lawn care's future is bright.

r. Roger C. Funk celebrates 25 years with The Davey Tree Expert Company next year. Starting his career as a horticulturist, last year he was named vice president and general manager of The Davey Institute, the company's impressive R&D division. His career with Davey coincides with the rise of lawn care as an industry.

"I watched lawn care become an organized, focused professional industry," recalls Roger. "I watched the pesticide issue become a major concern. I watched the public's perceptions change. And I watched the organic trend."

Dr. Funk, a scientist, has greatly contributed to the success and professionalism of lawn care through, both, his activities at Davey Tree and by his willingness to share what's he learned with fellow professionals. He's been a frequent speaker at lawn care conferences, and he's written extensively on a variety of horticultural topics.

In addition to managing The Davey Institute, he directs the arboricultural and horticultural consulting division, Davey Resource Group.

During his career with the Ohio-based

firm, Dr. Funk developed Plant Health Care, a holistic approach to plant care that's been widely adopted by the green industry. He researched and designed Davey's lawn care program, developed and patented Arbor Green slow-release tree fertilizer, and developed and patented the Davey Customizer pesticide metering system. Dr. Funk's research focus has been environmental issues, including soils, fertilization and pesticide reduction. **Shares knowledge with others**

"He's extremely thorough in everything he does," says Dr. Elton Smith, professor of horticulture (retired) at The Ohio State University. "He's done a lot for his company, but an awful lot for the green industry in general. He's written many articles and he's been extremely willing to share his knowledge with others."

Dr. Funk joined Davey in 1973 as a horticulturist after receiving his Ph.D. in Plant Physiology from the University of West Virginia.

"I had never seen a Davey truck and my perception of a tree company was pickup trucks and chain saws," Roger recalls of his school days in rural West Virginia. But his mentor, Dr. Eion Scott, chairman at plant physiology at UWV, urged him to join private industry over academia in spite of more lucrative job research/teaching offers from Penn State and Tuskegee, AL. "Until I interviewed with Davey I didn't realize how sophisticated the industry was. And how much more it would become."

After joining the Ohio firm, he was named technical advisor and director of The Davey Institute of Lawn Sciences in 1975, director of research in 1976, vice president of research and development in 1979, vice president of human and technical resources in 1985. In 1996 he was named vice president and general manager of The Davey Institute.

His research and teaching have helped keep The Davey Tree Expert Company at the forefront of the green industry.

"He is an excellent communicator and speaker," says co-worker and fellow scientist Dr. Balakrishna Rao.

"He's always been a big help to me. Whenever I've had questions, or needed second opinions, he's always offered useful, problem-solving solutions." LM

DR. ROGER FUNK'S CAREER HIGHLIGHTS

- 1973: Joins The Davey Tree Expert Company as a horticulturist
- 1975: Technical advisor and director of The Davey Institute of Lawn Sciences
- ▶ 1979: Vice president of research and development
- 1985: Vice president of human and technical resources

► 1996: Vice president and general manager of The Davey Institute

1996: Honored with the J. Sterling Morton Award by The National Arbor Day Foundation Member, American Association for Advancement of Science, American Society for Horticulture Science, American Institute of Biological Sciences, International Society for Horticultural Science, International Society of Arboriculture, National Arbor Day Foundation, New York Academy of Sciences, Ohio Academy of Sciences, Professional Lawn Care Association of America, Strathmore's Who's Who.



Melroe Bobcat offers two sizes of Bobcat landscape rakes.



An 8-foot-wide leveler from Purdy Manufacturing



A PTO-driven Anderson Rotary rock picker.

GROUND-WORKING TOOLS

These heavy-duty workers save hundreds of hours of hard, dusty labor when used to prepare a landscape site for project installation.

By CURT HARLER

Rock pickers, scarifiers and rakes are like football linemen. They do the tough dirty work up front, preparing the way for the pretty boys to finish the job.

When choosing a rock-picking machine, keep in mind that PTO-driven machines are generally more versatile and will give outstanding results in severe rock or debris conditions. According to Armor Metal Products President Lee Andrews, a good PTO-driven machine will pick to depths of three-to-five inches in dry, worked soil.

Ground-driven machines are primarily for surface work and work best where rock is brought to the surface, Andrews says.

There are several ways to determine the correct operating depth. One is to watch the reel teeth as they pass through the soil passing over the apron's leading edge. The reel arm crossbar (which holds the teeth) should not strike the soil. The apron leading edge bar sides do not run as deep as the reel teeth are picking, but do give a good gauge of depth. Don't allow too much soil to pile up on the apron.

If it is very dusty, note the position of the front hydraulic cylinder shaft to determine the amount of control used. If large quantities of dirt are coming over the top of the reel with the arms, odds are good you are running too deep. Don't let too much soil pile up on the apron, either.

Randy Purdy of Purdy Manufacturing notes that the rough ground working machines are being used by everyone from

developers, sod farms, golf courses, cemetery builders and softball and Little League associations.

Pickers generally are a good investment. A rock picker picking up roughly 250,000 pounds per day is doing the equivalent of 30 to 35-man days of rock removal. Even the toughest football player would be hard-pressed to keep up with that kind of performance.

ARMOR METAL PRODUCTS 406-442-5560 Circle No. 250

Heavy duty, Series-E PTO (power take off) driven Anderson Rotary Rock Picker is designed to remove rock ranging from golf-ball size to 200 pounds. The machine from Armor Metal, Helena, MT features constant reel power for continuous picking throughout its speed range of 1 mph to 5 mph. Self-cleaning apron and shock-protected reel are complimented by a 4000-pound capacity hopper which can be raised to 7.5 feet for truck loading. Requires wheel-type tractor with minimum 40 hp plus PTO and doubleacting hydraulics. Can move 200,000 to 300,000 pounds per day. Optional 11L-15 flotation tires are available for use in soft ground or severe conditions.

ARMOR METAL PRODUCTS 406-442-5560 Circle No. 251

Handle a 10-foot swath with the Armor Rock Windrower. The 27inch diameter reel is PTO driven, hydraulically controlled and has two spiral rows of double-braced, hardfaced teeth. Assembly is springloaded to give maximum ground pressure plus shock protection. Machine, made in Helena, MT handles rock conditions from scattered to severe.

DAIRON 717-288-9360 Circle No. 252

Quartet of tough machines from Dairon, Kingston, PA, handles stones, clods, grass and debris. The RX 130, RX 180, RX 220 and RX 300 Rotadairon units give working widths from 51 inches to 120 inches. Smaller two units require 48 to 95 hp, a 540 or 1000 rpm PTO and have a single side-driven transmission with dry clutch. The larger units need a Category 2 hitch, 1000 rpm PTO and a tractor with 90 to 150 hp. They have two-side drive and hydraulic clutches. These units cultivate to a depth of 8.5 inches. burving stones and leave a clean seed bed, creating a fine soil surface for good seed-soil contact.

GLENMAC 800-437-9779 Circle No. 253

The Harley Pro-6 and Pro-8 power rakes, from Glenmac, Jamestown, ND, level ground, pulverize the soil and remove stones and other debris. These units feature twin-drive rollers, oil-bath drives, splined power shafts, height adjustable wheels, and hydraulic float control on the Pro-8. Sized for 29-55 hp tractors, these units allow for left or right raking. The rotating tooth rollers leave a dimpled subsurface in the seedbed and a granular top, creating an excellent seedbed. Also available is the Model B stone picker that handles materials from one-half to 18 inches in diameter. Two models are available, requiring 35 to 75 PTO hp and an 11 gpm hydraulic at 1500 psi.

BEN MEADOWS CO 800-241-6401 Circle No. 254

When the rough grading is done and it's time to do the finish work, check out the full line of Union and True Temper rakes and forks available through the Ben Meadows catalog. On page 101 of the Atlanta, GA, firm's free catalog is a full line of level-head, bow, aluminum landscape and chrome-moly landscape rakes. Hoes, spades, picks and shovels are among the thousands of other landscaping-related



Harley power rakes level ground, pulverize the soil and remove stones and other debris. Features include twin-drive rollers, oilbath drives, splined power shafts, hydraulic float control.

products on the pages of this 460page book.

MELROE BOBCAT 701-241-8700 Circle No. 255

Two sizes of Bobcat landscape rakes, Models 5B and 6B, offer several improvements over the older A line from Melroe, Fargo, ND. Top cover has one-piece design for more strength, links allow the entire rake to float over ground contours, and improved cylinder supports offer better performance when scraping with the internal bucket. Chain tensioning is adjusted with tightening bolts as the chain wears and rake teeth have longer wear-life because of their trapezoidal shape. The drive motor in the 5B rake is sized for 12-15 gpm hydraulic flow; the 6B is sized for 15 to 18 gpm.

PURDY MANUFACTURING 501-946-3503 Circle No. 256

Two hard working levelers, the

D20 and a 3-point lift model are available from Purdy Manufacturing, DeWitt, AR. The D20 center axle rides on one center axle and the tractor draw bar. Patented trip blades and self-leveling cylinder make it perfect for raw new ground or finishing work. The 3-point lift model has a front V-blade for splitting hard ridges and cleaning or cutting out shallow V-ditches. Units range in size from five to 14 feet with the standard unit eight feet wide with 10 inch channel moldboards. The company will custombuild or modify any piece of equipment to suit individual needs. LM

Beyond nuts and

Modern equipment maintenance means you watch for use patterns, trust mechanic intuition and have an inventory system that works.

By LUKE FRANK

quipment care runs far deeper than changing fluids and checking parts. When dealing with a significant amount of your company's budget—which main-

tenance and personnel represent organization, education, communication and respect for each other and the equipment will place a company in a preventive posture, rather than demanding crisis management in peak season.

If there's an unsung hero in the landscape industry, it's probably your mechanic. Of all the people in your operation, "knuckle busters" are arguably the most responsible for the day-to-day success of a landscape company or golf course maintenance shop. But they can't do it alone.

Good equipment maintenance depends on training, organization and communication. Profitable landscape management practices require efficient technology, communication and record-keeping.

Not your customer's problem

"A good mechanic is essential for your business," says Eric Spalsbury, general manager of Albuquerque Grounds Maintenance (AGM), Inc. in Albuquerque, NM.

"Clients don't understand or want to hear about your equipment problems," he adds. "They'll find someone else who can service them." Downtime is costly. Equipment sitting idle in the shop means less productivity in the field.

Ken Graves, with Desert Princess Country Club and Resort in Cathedral City, Calif., points out that part of management's responsibility is to continually strive to complete more work in less time.

"And to a point, technology enables that to happen," he adds. "But with that philosophy, maintenance becomes increasingly important." His operation cultivates 400 acres of landscape and golf courses that sport consistent year-round traffic.

Ken Railey, who oversees \$3.5 million in equipment for Ruppert Landscape Co. Inc. in Maryland, offers that, although productivity is clearly important, safety is first in the proper maintenance of equipment. Of the 1,500-plus pieces of equipment under his domain, Railey reminds his seven shop managers that "safety is most important, then productivity, then image."

Take inventory now!

A stringent and current inventory system serves the mechanic, the crew and the company at every level. You must keep consistent and effective maintenance schedules. This keeps equipment performing the way manufacturers intended, which equates to properly performing, safe equipment.

Unfortunately, in the crush of a punishing season, common sense can elude us.



Maintenance schedules change because of what the crew learns about equipment.

The key? Having enough equipment to serve an expanding clientele without sitting on equipment that's not being used. It's an oscillating balance, but an inventory system, *any* system, will help.

Look for use, wear 'patterns'

Railey started with Ruppert about 15 years ago, tracking equipment with a binder and loose leaf paper. "I graduated to an index card system, then as the company continued to grow, I recognized the opportunity to log, analyze and compare maintenance procedures to find common denominators," he relates.

With the help of a computer software program, Railey compares shop activities for maintenance techniques, parts demands, equipment turnover and more. Patterns in equipment wear and failure begin to emerge.



Interstate or inner city, your equipment needs to be documented. Spalsbury is looking for a turnkey software program to document equipment acquisition and maintenance. "We've spent a lot of time looking for a good software application," he admits. "It's a difficult transition, but we're at a point right now where our growth can really use the convenience and accuracy of computerized equipment maintenance."

"We track individual pieces of equipment by year, make and model," explains AGM's Fleet Manager George Cortez. "We log all maintenance and repairs for each machine, then we can see the history, which helps determine whether to repair or replace, and what to replace when we start tearing into a piece of equipment." New equipment is immediately added to the master list. Anything sold or retired is labeled accordingly, but records are kept to compare with similar pieces of equipment acquired down the road.

Train to maintain, retain

The link between inventory and maintenance is evident. Having the history of equipment quickly accessible will help you to repeat the positive, while preparing for past problems. Most agree that fleet vehicles are the most important equipment to the organization. "We have to have our trucks running or we can't do business," says Cortez. "Fleet trucks are our numberone priority," insists Railey. "We have to get to the work site."

That priority manifests itself in the rigorous maintenance schedules assigned to Ruppert's sales vehicles. "Our work trucks are on maintenance time schedules 'A,' 'B' and 'C," he explains. Twice during the landscape season 'B' and 'C' schedules are performed, which include washing the engine compartment, minor tune-up, oil change, lubrication, and a check of lights, tire pressure, belts, hoses, cables and cooling system. 'A' maintenance, performed once a season,

includes washing the engine, frame and underbody, replacing all filters and fluids, a major tuneup, tightening all wheel lugs and axle flanges, and paint the vehicle's body, boards and wheels. In addition, each fleet vehicle gets a total reconditioning every year. "We're very thorough, and as a result, our work trucks usually perform to about 300,000 miles or around 20 years," he asserts.

How do you keep 1,543 pieces of small equipment running? Besides the basics, fluid and filter changes, it takes constant training and education, and a true team effort. Involve the crew, Railey asserts.

The Desert Princess crew keeps an eye on mower blades, in use 80 hours a week.

"Crew leaders and assistants perform the regular maintenance, and the mechanics handle all major repairs," he points out. "Our crews leaders clean and inspect all their equipment, change the oil, clean the filters, lubricate and sharpen blades twice weekly." Railey says that each crew spends about six hours a week on maintenance.

Graves bases his maintenance schedules strictly on manufacturer recommendations. "In the desert," he begins, "we really have to keep up, due to the heat and the stress placed on mowers churning through bermudagrass in the summer and ryegrass in the winter. We really have to watch the quality of the cut we get from our mowers. We go nonstop about 80 hours a week for maintenance on our golf turf equipment. Most of that is sharpening blades." His personal tip - use compressed air for daily cleaning. "When you use water everyday on a machine, it gets into the bearings and the fittings," he advises. "Water every day is just not good for equipment."

Railey begins with manufacturer recommendations, but then maintenance schedules are adjusted according to experience. "If there's a trick," he suggests, "it's

> having an open mind. Every year our maintenance schedules change because of the input from crew members working with the equipment daily."

"That's the whole key," agrees Graves. "The operators have to communicate with the mechanics. There's no problem too small, because ultimately, small problems unaddressed lead to big problems."

Getting the crews to care seems to be a matter of generat-

ing respect among all members. Involve the entire crew in regular maintenance. Send them to distributor demonstrations and promotions, trade shows and association meetings. Encourage them to read trade journals. Get them involved. "You have to take care



Railey: repair logs went from index cards to computer programs.

A D V E R T O R I A I

Joe Prisco Site Manager Carmine Labriola Contracting Corporation

Achieve Single Application Control with MERIT

Imagine an insecticide that only takes a single application to provide control for a broad spectrum of insects on turf, trees and ornamentals. This same insecticide would greatly reduce the time and expense of multiple applications you're currently making with other products to attain the same control.

Sound too good to be true?

Lawn care operators and golf course superintendents alike use only those products they can depend on. And many depend on MERIT[®] Insecticide, a product of Bayer Corporation.

Like Joe Prisco of Carmine Labriola Contracting Corporation in Scarsdale, N.Y.

"Since we began using the product three years ago, MERIT has saved us."

The Ultimate Grub Control

Prisco started using MERIT when several of his clients had terrible grub problems. "The grub controls that we were using just weren't working," says Prisco. "So we had to take curative measures, and ended up putting down a lot of product. It was taking two or more applications to knock them down."

The problem was so bad in some areas, Carmine Labriola Contracting Corporation had to replace sod. "At some of the apartment complexes we treated, we basically had to remove the damaged sod and bring in pallet loads of new sod to replace the areas that had been damaged," says Prisco. "This whole process took a couple of years and was very costly."

So now, they use MERIT. "We like MERIT because its timing is great," he says. "The one-time application definitely is a savings, and not having to worry about whether the product is performing the rest of the season takes a lot of weight off your shoulders."

As a result, Carmine Labriola Contracting Corporation has seen a reduction in the number of call-backs. "Since we began using the product three years ago, MERIT has saved us."



Carmine Labriola Contracting Corporation treats the turf and ornamentals with MERIT at Boulder Ridge, a condominium complex in Scarsdale, N.Y.



of your people. A 'hire-for-life' philosophy, training, benefits," insists Railey.

"If we do our job well in the winter," Railey concludes, "then maintenance is slow in the summer."

Cortez agrees. "The real maintenance

occurs in the winter," he adds. "We go through every machine from top to bottom. We check the history of each piece of equipment, and how it performed during the summer, then move into checking engine compression to determine whether to short-block or rebuild. We change all of the belts, tires, fittings, nuts, bearings and so forth."

> —Luke Frank is a freelance writer for the landscape industry, based in Albuquerque, NM.

11 tips for winterizing outdoor power equipment

By PETE FERNALD

Anybody who uses power equipment and has changing seasons to deal with worries about the effects of winter layoffs, and with good reason. If your approach is just to throw your saw or trimmer on a shelf and figure you'll deal with it later, you can be pretty sure it'll be cranky, if not dead, when you pick it up again. And you'll face substantial service bills.

If you don't want the hassle (or cost) of rehabilitating your power equipment next spring, there are some quick and simple steps you can take now to make sure your equipment starts easy and performs well the next time you need it. Here are some useful winterizing tips:

PAY ATTENTION TO THE FUEL. You have two choices: drain it or stabilize it. The problem is that today's unleaded fuel has a shelf life of about 30 days. After that it starts to break down, build up varnishes and do all sorts of engine-choking things.

If you drain the fuel, make sure you get it out of all the carburetors and lines so they're dry. Taking the little extra time to do a complete job will pay off.

An even simpler approach is to add gas stabilizer to the fuel in the tank before you store the tool. That easy step goes a long way toward eliminating problems with fuel. You can buy stabilizer anywhere, and it's the single most important thing you can do to winterize power equipment.

IS AIR CLEANER CLEAN? The filter element in the equipment's air cleaner should be clean and free from dust buildup. More important, it should be intact. If neither is the case, either blow it out with compressed air or go get a new one.

REGREASE GEAR CASE. Even people who remember engines sometimes forget about gear cases. Any trimmer, brushcutter or PowerBroom needs its gear case serviced periodically, and now is a good time. It's a simple process. Remove the collar underneath the blade holder(s), then remove the plug on the case to pump new, clean grease in and push the old out. Then turn the head a couple of times to distribute it.

EXAMINE FUEL PICKUP TUBE. It's important to give the fuel pickup tube a hard look because it relates directly to engine performance. For the external tube, look for signs of weather checking and cracking. For the internal tube, look for deterioration. Even tiny holes allow air to get in, disturbing fuel flow. If you see anything suspicious, replace it.

CLEAN CYLINDER FINS. Most outdoor power equipment engines are air-cooled, and the fins around the cylinders do the cooling. If they're loaded with debris, they can't do their job. Take a minute to scrape off the fins with a piece of scrap wood.

UNCLOG MUFFLER/SPARK ARRESTER. Pull the cover/heat shield off the muffler assembly and make sure it's clear of grass, dirt and dust. If that stuff builds up too much in there, poor engine performance will be the least of your worries. Left untended, dirty muffler temperatures can get hot enough to light anything flammable. And dry grass burns.

REPLACE SPARK PLUG. Replacing a

spark plug is easy, so why wait? Do it now, not later.

CHECK WEAR, DAMAGE. It makes good sense, depending on how hard you use your gear, to inspect all the cables, gear cases, switches, etc. for signs of wear or damage. If you find a problem that will affect performance, control or safety—fix it. And do that every year at this time.

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PROTECT EXPOSED SURFACES. If you store equipment where it's exposed to moisture, it's a good idea to coat exposed areas—especially wear surfaces—with a film of grease or oil. If it's a complicated piece, spray it with WD-40 at least. Do this and rust won't be a problem.

STORE PROPERLY. Now that you've gone through your gear and performed all the winterizing necessaries, take a minute to think about how you're going to store it. Even carefully serviced equipment is going to suffer if it's dumped in a pile on the end of the bench, or kicked around the shop floor for a month or two. Our advice: shelves and hangers. Hang shafted tools up. You can get the heavy prongs at any hardware store. Store saws and hedge trimmers on high shelves, on plastic trays in case any oil or grease drops off. If it's a dusty space, cover the engines.

NEXT SPRING'S TASK. There's only one thing left, and you should wait until next spring to do it. That's checking, and possibly replacing, the fuel filter. If it's hard or dirty, get a new one.

—The author is technical services manager, Shindaiwa, Inc.

Superintendents Depend on MERIT

Jim Loke, CGCS, was sold on MERIT even before he tried it on his course at Bent Creek Country Club in Lititz, Pa., because of the latest university research. "In 1996, the entomologists from Pennsylvania State University came out and did test plots," he says. "That's when we saw the significant differences in the turf treated with MERIT as opposed to the untreated areas."

Loke first used MERIT in 1996 after seeing high populations of Japanese beetles and black turfgrass ataenius the previous year. "The results were dramatic," he says.

The larvae of black turfgrass ataenius are a common problem on golf courses with



Liz Caudill Co-Owner Green Season Inc.



This homeowner's lawn was protected from grub damage with one application of MERIT early in the season.

a predominance of annual bluegrass (*Poa annua*) mixed with Kentucky bluegrass or bentgrass. The larvae feed on the grass roots, resulting in wilting and eventual death of infested turf.

Loke particularly likes the application flexibility and the length of residual activity of MERIT. "The unique thing about MERIT is that I started spraying in late June with my last application in July. The lateness and the timing didn't seem to matter," explains Loke. "MERIT performed throughout with only one application. We have seen great preventative control and suppression of damaging insects."



Jim Loke CGCS Bent Creek Country Club



Bent Creek Country Club has been open for play since 1993 and has approximately 340 golfing members.

LCOs Experience Fewer Call-backs

Ever since Green Season Inc. in Harrisburg, Pa., started using MERIT in their lawn, tree and shrub care service, Liz Caudill's phone doesn't ring as much.

"I'm on the receiving end of complaint calls, so I know if something is working or not," says Caudill, one of the company's three owners. "And if our clients aren't happy, I hear about it. The phone isn't ringing as much thank goodness to MERIT. MERIT has tremendously reduced my service calls." Green Season Inc. prefers to sell preventative methods for their clients with grub problems as much as possible. "We always sell preventative methods," she says. "It's an insurance policy that if the beetles lay their eggs, we will have had it covered. We don't want to see replacement costs. It's such a waste of time and money if you can prevent it with something like MERIT."

One of the neighborhoods Green Season services was recently hit very hard with grubs. The next year, they applied MERIT as a preventative to every customer's lawn and were pleased with the results.

To prevent stripping bark, prune large limbs in three cuts. Make the first cut under the limb, the second on top to remove the majority of the limb, then the third to remove the stub. Proper tree and shrub pruning removes the dead, weakened, diseased or insect-infested branches. It prolongs plant life and improves plant health and appearance.

runing is important for landscape plants, which are often subject to stressful growing conditions. Although maintenance pruning of most shade trees can be done yearround, intensive pruning should be done in the dormant season.

Late winter to early spring, just prior to the start of new growth, is a good time for pruning trees.

Pruning cuts made in the dormant season close rapidly during the flush of growth in the spring.

In trees that lose their leaves, it is easier to spot problem areas during the dormant season. Also, new leaves that emerge the following spring mask cuts made in winter. Pruning in late fall and